Sustainable Uses for Biological Resources (SUBIR) Project

Phase I Evaluation

Submitted to
United States Agency for International Development/Ecuador
Under Cooperative Agreement No. 518-0069-a-00-1113-00

Submitted by
Tropical Research and Development
Gainesville, Florida, USA

June 14, 1994

Sustainable Uses for Biological Resources
(SUBIR) Project
Prepared for USAID/Ecuador
(May 1994)

Phase I Evaluation

Prepared by

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Acronyms

ATAACU	Asociación de Trabajadores Agrícolas Autónomos de Cuellaje
BOTROSA	Bosques Tropicales S.A. (Grupo Durini)
CAAM	Comisión Asesora Ambiental de la Presidencia de la República
CCD	Corporación para la Conservación y el Desarrollo
CDC	Centro de Datos para la Conservación
CEDENMA	Comité Ecuatoriano para la Defensa del Medio Ambiente
CETUR	Corporación Ecuatoriana de Turismo
DINEIBE	Dirección General de Educación Indígena Bilingüe-Esmeraldas
EA	Environmental Assessment
ENDESA	Enchapes Decorativos S.A. (Grupo Durini)
FCUNAE	Federación de Comunidades Unión de Nativos de la Amazonía Ecuatoriana
FECCHE	Federación de Centros Chachi de Esmeraldas
FUNDEAL	Fundación para el Desarrollo Alternativo
GEF	Global Environmental Facility of the World Bank
GTZ	Sociedad Alemana de Cooperación Técnica
ICDP	Integrated Conservation Development Program
LAC	Latin America and Caribbean
MAG	Ministerio de Agricultura y Ganadería
OEA	Organización de Estados Americanos
ONHAE	Organización de la Nacionalidad Huaorani de la Amazonía Ecuatoriana
SOATRA	Servicio Obligatorio del Año Técnico Rural Agrícola
SUBIR	Sustainable Uses for Biological Resources
USAID	United States Agency for International Development
UTEPA	Unidad Técnica del Plan Awa

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Joshua Dickinson
Vice President, TR&D

Executive Summary

Project background

Ecuador is among the most physically and biologically diverse countries in the world, made famous by the nineteenth-century writings of Darwin and von Humboldt. The SUBIR project encompasses an array of more than a dozen major ecosystems. The people who use the resources of the SUBIR project area are culturally and ethnically diverse as well. Of great concern to SUBIR are the competing and often destructive uses of fragile ecosystems in the project area. For millennia relatively stable populations have modified the landscape but have not markedly changed it. This relatively stable relation between peoples and the land is changing rapidly as

- the people of the area become aculturated and increase their market orientation,
- settlers from higher and dryer environments aggressively occupy and deforest lands little suited for agriculture and grazing,
- timber exploitation that devalues the forest by the highly selective removal of only a few valuable trees is followed by abandonment and invasion by settlers following logging roads, and
- petroleum exploration and exploitation contributes indirectly to deforestation by opening areas to deforestation.

Goal and purpose of the SUBIR Project

The Project *goal* is to contribute to the conservation and management of Ecuador's renewable natural resources for sustained economic development.

The Project *purpose* is to identify, test, and develop *in the field* ecologically and socially sustainable resource management models in selected protected areas and their buffer zones to preserve biodiversity and improve the economic well-being of local communities through their participation in the management of natural resources.

SUBIR's goal and purpose are congruent with USAID/Ecuador's Strategic Objective No. 4, to "Promote the Sustainable Use of Natural Resources, the Conservation of Biological Diversity, and the Control of Pollution."

The Project was designed and implemented using USAID's collaborative assistance mode by a consortium of CARE International/Ecuador (the lead entity), The Nature Conservancy, and the Wildlife Conservation Society. These United States-based nonprofit organizations are expected to provide matching cash or in-kind services equal to approximately 25 percent of the $4.8 million USAID grant. The counterpart organization is the Ministry of Agriculture's Forest, Natural Areas and Fauna Institute (INEFAN). In keeping with the SUBIR focus on local-level participation, over two hundred nonprofit, indigenous and community organizations were consulted, though not directly involved, during project design.

The geographic focus of the project is the land encompassing three major protected areas, the Cotacachi-Cayapas Ecological Reserve, the Cayambe-Coca Ecological Reserve, and the Yasuní National Park in northern Ecuador. The area of concern stretches from tidewater on the Pacific across the Andes into the Amazon basin, a distance of almost 500 kilometers.

SUBIR has progressed toward achieving the Project's purpose by grasping an *opportunity*, established communities' appreciation of their natural resource base and their willingness improve the management of those resources. The Project has strengthened second-level organizations, communities, and selected nongovernmental organizations in activities focused on resource uses that are sustainable and profitable, including forestry, ecotourism, and agriculture. Also addressed have been *constraints* on achieving the Project's purpose such as resource and land tenure uncertainty, lack of controls, or incentives affecting timber and petroleum extraction, and the Government of Ecuador's lack of institutional capacity and commitment to sustainable resource management and the conservation of biological diversity.

Purpose of the evaluation

The SUBIR Project was designed and approved for ten years with an initial authorization for six years. The Project design stipulates specific goals to be accomplished during the first stage, Phase I, prior to amendment of the Cooperative Agreement for Phases II and III. This evaluation comes at the end of the three-year Phase I of the SUBIR Project.

The evaluation has measured progress toward achieving the objectives set forth in the Project Paper and progress toward meeting Mission Strategic Objective No. 4. Extensive recommendations are made to improve Project management and for more efficient use of Project resources to achieve technical objectives.

Findings and conclusions

Accomplishments

Accomplishments of the Project are measured for the two-year period since March 1992. Various substantial results have been achieved and initiatives launched with a high probability of future success. The positive results must be analyzed, built upon, and further refined or stimulated. Among the many achievements and successes of SUBIR, the evaluation team finds the following especially noteworthy.

SUBIR sustainability, research, and training.—With SUBIR's help, Ecociencia has become Ecuador's premier biological research and training institution capable of supporting not only Phase II of SUBIR but similar initiatives elsewhere. SUBIR/ Ecociencia research has yielded considerable baseline data on the biological resources of many of the Project sites and has served as a fertile training ground for both scientists and community "parabiologists."

Grassroots democracy, development, and conservation.—The paralegal program trains and assists local people in community laws and legal advocacy on issues such as land titling and natural resource access rights. SUBIR is strengthening second-level organizations to test and extend sustainable uses of biological resources. "Guardaparques comunitarios" bolster a weakened park protection system with assistance from SUBIR and second-level organizations.

Development-environment dialogue.—SUBIR has made significant strides in opening channels of communication between environmental groups and natural resources related industries, particularly with Endesa/Botrosa in timber and Maxus in oil exploration. These established linkages, combined with SUBIR field efforts, demonstrate promise for influencing the improved management of resources by private-sector entities and affecting the overall policy environment.

Conservation of biological diversity.—The geographical focus of the Project is particularly conducive to the conservation of ecosystem diversity. SUBIR has focused on three protected areas and their buffer zones that efficiently encompass an array of more than a dozen distinct ecosystems from Pacific mangroves through cloud forests, páramos, and the forests of the Amazon.

Significant problem areas

Serious problems identified by the evaluation team must be rectified or well on the way to resolution before authorization to embark on Phase II of the SUBIR Project. Solving these problems will require a major investment of time and changes in SUBIR structure and operations.

Consortium Executive Committee.—The arrangement whereby the Consortium Executive Committee undertook project management oversight and policy guidance has proved unworkable due to duplication of administrative processes and delays in making and implementing critical decisions. In essence the project is functioning with two boards of directors, since the Project Implementation Committee and the Consortium Executive Committee have come to play virtually the same role, even though the Project Implementation Committee was created to play a more substantive role than the Consortium Executive Committee. This has led to confusion, delays, and a loss of efficiency in the management of the SUBIR project. Legitimate Project management interventions by USAID/Ecuador have been frustrated.

Management conflict.—CARE is the lead, and legally responsible, institution and is attempting

to systematize all aspects of Project management and administration. Some members of the Consortium not in agreement with CARE policies prefer to handle hiring and salary issues separately. The SUBIR Project Coordinator at times received directions from the Consortium Executive Committee, USAID, and CARE/ Ecuador. These different chains of authority have led to management frustration, created confused signals, and contributed to high turnover from the coordinator down through the Project field staff.

Scattered efforts.—The most recently available USAID Project Status Report (Apr. 1–Sept. 30, 1993) reports that SUBIR was carrying out more than 300 activities at the time. This number was subsequently scaled back, but draft 1994 work plans still reflect an overburden of disparate activities in scattered sites. This is a highly unrealistic appreciation of the geographic spread and logistic difficulties of simultaneously initiating activities in three major protected areas.

Monitoring and evaluation.—At present the integrated analysis of Project activities is essentially nonexistent. Staff have some inherent sense of what has and has not worked and why, but there is no systematized way of accessing data about Project activities, comparing them within and between the three Project areas, documenting them and making that information available to interested parties in Ecuador and elsewhere. In short, SUBIR is not yet able to function as the "learning institution" it was intended to be in the Project Paper. After nearly three years of implementation, SUBIR still has no functioning monitoring and evaluation system.

Recommendations

Consortium Executive Committee.—Reconfirm the role of CARE/Ecuador as the lead organization responsible for the management and implementation of the SUBIR Project and do away with the present system wherein the Consortium Executive Committee has management oversight. CARE/Ecuador would sign subcontracting agreements with both international and national nongovernmental organizations and institutions with requisite technical skills to ensure successful implementation of the SUBIR Project. CARE/Ecuador would need to ensure that an open dialogue is maintained with all participating institutions in order to receive the benefit of their experience when policy and implementation issues are addressed.

The Project Advisory Committee.—Actively seek to strengthen the Project Implementation Committee in order to promote substantive Ecuadorian participation in the implementation of the Project. The Project Implementation Committee should function as an advisory committee to CARE/Ecuador and USAID/Ecuador. Given this advisory role, it is recommended that the name of the *Project Implementation Committee* be changed to *Project Advisory Committee*. The committee should meet regularly, offering an ideal forum for policy discussions among the members and afford USAID the opportunity to introduce policy initiatives in a framework involving participation by the national nongovernmental organization community, the Government of Ecuador, and the international nongovernmental organizations.

Geographic integration.—Given the ecological importance of the three protected areas, investments to date in the three areas, and the importance of the Project's presence in establishing protection for the reserves, SUBIR should continue to work in Cotacachi-Cayapas Ecological Reserve, Cayambe-Coca Ecological Reserve, and Yasuní National Park. The breadth of activities programmed for each area should be scaled down significantly and efforts concentrated. Attention needs to be given to identifying, protecting, and restoring the critical processes and systems that ecologically link these reserves.

Topical integration.—During redesign, initial benchmarks must be seriously revised downward. The wide diversity of activities needs to be critically reexamined and clear criteria set for determining what array of activity types should or should not be undertaken. Whatever activity types are retained, these *must* be intimately integrated across components. Field teams should be relocated so as to spend most of their time living in communities of participating second-level organizations, retaining only a skeleton staff at each of the present four field offices of SUBIR.

Critical review.—SUBIR must implement a comprehensive, tightly structured, and highly critical analysis of all activities to date, documenting its findings and nascent models. The process will require at least two months of careful effort and highly qualified outside expertise to guide and facilitate it. This analytic effort must be detailed with evaluation instruments applied to Project activities and to staff review.

Monitoring and evaluation.—At the same time that staff are engaging in the review outlined above, they must establish and test a serious and comprehensive management information and monitoring evaluation system with data provided through the critical review. The information generated through the above exercises must feed into a systematic *strategic planning effort*. Approval of Phase II should depend on SUBIR's successful completion of these monitoring and evaluation activities.

Policy initiatives.—The policy component of a project like SUBIR must be designed from the ground up, determining first if people in rural areas are affected by existing policies in efforts to improve their well-being and manage natural resources. These efforts set the stage and define the agenda for national-level analyses and dialogue. This sequence of steps should lead to the most appropriate policy and regulatory reforms.

Sustainability.—As part of this strategic effort SUBIR needs to focus on the sustainability of its activities. The Project needs to work with and through a select number of nongovernmental organizations, the nongovernmental umbrella group Comité Ecuatoriano para la Defensa del Medio Ambiente (CEDENMA), large and vocal second-level organizations, and perhaps an enlightened tourism sector to ensure a high level of Ecuadorian participation that can result in future takeover of activities that SUBIR is currently promoting and implementing. Phase II should provide the springboard for greater Ecuadorian participation and management control over specific aspects of SUBIR. SUBIR needs to emphasize the development of economically sustainable activities that ensure a flow of income to rural communities on the periphery of protected areas. This will reduce their dependence on protected area resources and provide a more auspicious climate for fostering a conservation ethic.

Lessons learned

Conflicting priorities.—The involvement of multiple international nongovernmental organizations in Project design and implementation must be evaluated very carefully. Summing up the different concerns and interests of the individual nongovernmental organizations does not necessarily equal the best possible project, either at the design or implementation stage.

National participation.—Not involving local nongovernmental organizations and other relevant stakeholders in Project design and implementation causes friction and limits local support for Project objectives.

Clear expectations.—Mutual expectations and obligations for counterpart agencies and other critically involved institutional participants should be made clear at the outset.

Management structure.—Project management and governance structure is critical, especially when a number of different entities are involved in Project design and implementation. The management structure must encourage full technical participation while avoiding conflictive lines of authority.

Stakeholder involvement.—The use of natural resources involves an array of potentially conflictive actors including conservationists, colonists, indigenous peoples, miners, and loggers. Development agencies and nongovernmental organizations must promote dialogue among the various interest groups, recognizing their legitimate interests if sustainable use is to be approximated.

Focus and concentration.—Effective model building and testing of integrated approaches to use of natural resources can best occur when focused on a limited but representative geographic area where impacts can be monitored and analyzed.

Broad action implications

The greatest diversity of ecosystems and species often occurs in countries where conservation of biodiversity has a low priority. Even if the priority were higher, the financial resources and trained professionals are not adequate to carry out programs on the scale needed. The implication of this reality for USAID in Ecuador, and for all organizations capable of marshaling resources for biodiversity conservation, is that SUBIR-like projects will be needed on an expanded scale with multidonor support for many years. This support needs to be complemented by strong programs that promote greater economic well-being among rural populations, stable population, and universal environmental awareness.

2. Introduction

2.2. The SUBIR Project

2.2.2. Project background

Ecuador is ecologically and culturally diverse. Ecosystems ranging from the Galapagos Islands across the snow-capped Andes into the humid Amazon basin account for the broad range of its biological diversity. Its ethnic and cultural diversity is also rich, and the utilization of renewable and nonrenewable resources in Ecuador is equally varied. Of particular interest to the Sustainable Uses for Biological Resources (SUBIR) Project are the often competing uses of fragile and often biologically diverse ecosystems. Relatively stable indigenous agricultural, hunting, and gathering societies have modified, but not markedly changed, these ecosystems over millennia. Both the tropical ecosystems and the societies are threatened by (a) the increasing acculturation and market orientation of indigenous people themselves, (b) aggressive encroachment by agricultural settlers from higher and dryer environments, (c) rapid population growth,[1] (d) timber exploitation that devalues forests by unmanaged removal of the most valuable species, and (e) petroleum exploration and exploitation. Singly and in combination these activities contribute to deforestation and loss of biological diversity.

Settlers, loggers, oil companies, and policies of the Government of Ecuador have all contributed to biological resource mining and destruction. Efforts by the Government of Ecuador to promote the productive and sustainable use of Ecuador's rich biological resources for all its peoples have been poorly financed and organized.

In brief, this was the context in which the United States Agency for International Development (USAID)/Ecuador's SUBIR Project was conceived and mounted. Currently, SUBIR represents the major activity for supporting USAID/Ecuador's Strategic Objective No. 4, to "promote the sustainable use of natural resources, the conservation of biological diversity, and the control of pollution." As enunciated in the Project Paper:

> The goal of the Project is the conservation and management of Ecuador's renewable natural resources for sustained economic development. Its purpose is to identify, test, and develop economically, ecologically, and socially sustainable resource management models in selected conservation units and their buffer zones in order to preserve biodiversity and improve the economic well-being of local communities through their participation in the management of renewable natural resources.

[1] According to various sources, no data on fertility rates and population growth exist for indigenous or forest-dwelling peoples in Ecuador or both. Thus it is uncertain to what extent demographic variables among such populations may or may not be contributing to pressure on biological resources. But because Western medicine and nutritional information have advanced into these areas, population growth is likely.

Designed as a 10-year effort, the Project was authorized for an initial six years in July 1991. In August 1991, the SUBIR Cooperative Agreement (No. 518-0069-A-00-1113-00) was approved, for a projected Phase I total of $4,872,053 from 30 August 1991 to 31 December 1994. Across the 10-year life of the Project, a total USAID grant of $15 million is envisioned.

The Project was designed and implemented using USAID's collaborative assistance mode in conjunction with a consortium composed of CARE International/ Ecuador (the lead entity), The Nature Conservancy, and the Wildlife Conservation Society, a division of the New York Zoological Society (see Chapter 2). Consortium members are expected to complement USAID monies with their own and other donor funds; counterparts and participants in Project activities are expected to provide on average a 25-percent match in cash or in kind. SUBIR's principal Government of Ecuador counterpart is the Ministry of Agriculture and Livestock's Instituto Ecuatoriano Forestal y de Areas Naturales y Vida Silvestre (INEFAN). At the time the initial accord of cooperation was signed on 12 September 1991, INEFAN was known as SUFOREN (Subsecretaría Forestal y de Recursos Naturales Renovables).

Also participating in the design process were 126 public and private Ecuadorian organizations, including nongovernmental organizations, private enterprises, social groups, and approximately 100 Amerind, Afro-Ecuadorian, and mestizo communities in environmentally threatened areas. This participatory design feature was consonant with SUBIR's “principal focus … [on] resource users at the local level” (SUBIR Project Paper, p. 25) as the nexus of the human and biological-resources interface.

Based on a review of the existing natural resource literature on Ecuador, on a series of field surveys of environmentally critical areas, and on a set of rigorous criteria for prioritizing most-threatened status, the Project design exercise identified three protected areas with their respective zones of influence for initiation of SUBIR activities:

- the Cotacachi-Cayapas Ecological Reserve, with Project Offices in the towns of Borbón, for the lower part of the reserve, and Ibarra for the upper part;
- the Cayambe-Coca Ecological Reserve, with Project Offices in Borja for the lower part of the reserve and, again, Ibarra for the upper part); and
- the Yasuní National Park, with a Project Office in the town of Coca.

In addition to the regional offices outlined above, SUBIR maintains a central Project Office in Ecuador's capital city, Quito (Chapter 2).

Activities in protected areas and their zones of influence were designed to take place in three phases across the 10-year LOP.

Phase I:	Development of pilot environment-and-development activities in the three protected areas selected, within four communities of each area (three years).
Phase II:	Application and extension of lessons learned in Phase I activities to three more protected areas and their zones of influence (three years).
Phase III:	Continuation and intensification of II above (four years).

Activities are carried out under what have now come to be seven substantive components plus an eighth, management and administrative (Chapter 2), component.

Organizational Development of local communities and of local and national governmental and nongovernmental organizations—including second-level organizations such as federations of native peoples, provincial or regional associations, cross-community cooperatives, etc.—to enhance their capacity to manage biological resource utilization and conservation in State-protected areas and their surrounding zones of influence through organizational and administrative training and development.

Protected Areas Management, as the main reserves of biological resources, to conserve ecological systems of scientific and economic value, for the benefit of the population in the buffer zones as well as for the entire country.

Ecotourism Development, to give new and alternative value to the biocultural diversity found in such areas and zones, to provide a continuous source of income to support their management and to generate employment for local people.

Improved Use of Land and Biological Resources in Buffer Zones, to identify, verify, and disseminate technologies, practices, and knowledge of soil, water, crop, livestock, forestry/agroforestry, fishery, crafts, product processing and marketing, etc. alternatives to offset currently *un*sustainable uses of the land and its renewable natural resources while increasing the productivity and income of populations residing near protected areas.

Research and Monitoring, to increase basic scientific knowledge of the existing biological resources and their sociocultural contexts but in a way that is directly applicable to Project development initiatives; to establish a database for protected-area management planning; to identify possible economic uses of the biological resources in buffer zones; to monitor the impact of Project activities on both the biophysical and human ecologies; and to scientifically evaluate both ecological and socioeconomic factors and policies aimed at the sustainable use of renewable resources.

Policy Analysis, to stem the loss of biodiversity and accelerate the transition from resource mining to resource management by, e.g.: identifying improved institutional arrangements for managing Ecuador's protected areas; outlining policy options to encourage reforestation and the wise use and management of Government of Ecuador and privately owned natural resources; and conducting public seminars and conferences to debate the options.

Interorganizational Coordination, to synchronize actions and resolve conflicts among governmental organizations, nongovernmental organizations, second-level organizations, and the different donors involved in the sustainable use of biological resources at local and national levels.

The SUBIR central office in Quito is currently staffed with a coordinator for each of the seven components listed above except the only-recently-added Policy Analysis Component. The SUBIR Project Coordinator handles the Interorganizational Coordination as well as Management and Administration. In the Project's 4 field offices, distribution of professional capacity in the various components and the disciplines needed to implement them is more uneven (Chapter 2).

2.2.4. The SUBIR philosophy and approach

SUBIR is based on the premise that biological resources can be sustainably developed and used in a way that optimizes present economic and social benefits without jeopardizing potential future benefits. The Project Paper emphasizes activities that take into account the human to natural resources relationship, with particular attention to strengthening local organizations, especially communities and their second-level organizations. However, today SUBIR also features considerable involvement of governmental organizations, national and international nongovernmental organizations, and the private sector to carry out environment-and-development activities at the local level, thereby strengthening such entities' ability to respond to the needs of the communities within the Project areas.

SUBIR represents a new project style in Ecuador. Many of the programs and activities proposed under its various components have not been tested under the ecological and sociocultural conditions found in the three protected areas selected. Project strategies and technologies must therefore be adapted and polished throughout implementation. This is one of the reasons that a “rolling design” approach was approved for SUBIR.

The untested character of many Project components also is the rationale behind the Project's first-year emphasis on a series of basic biological and socioeconomic diagnostic studies as a prerequisite to initiating work in a new zone or community. Fieldwork for this diagnostic effort was conducted between 3 and 25 November 1991. The total of 24 individual studies that resulted by March 1992 provided the foundation for elaborating the Project activities for Phase I. These studies were also intended to provide the main baseline for ongoing monitoring and evaluation of the Project's progress and impact. The goal was for this monitoring and evaluation information to be fed back to all levels so as to continuously improve the Project.

Given SUBIR's broad array of components and geographic locations, a major challenge for the Project has been how to implement planned activities in an integrated and coherent fashion. A process is required that includes research, testing, monitoring, and evaluation, where Project actions can be constantly adapted to new information and experience. Considering this, four key factors figure in the SUBIR philosophy and approach.

- *Gradual implementation in stages:* SUBIR mechanisms and techniques are verified on a smaller scale before being disseminated more extensively. Work was envisioned as beginning with selected activities in a relatively small number of strategically located communities that represented the best local organizations identified during field diagnostic studies. Demonstration plots or modules or both were established as the focus of investigation, verification, awareness-raising, and training. Both the technological and

sociological mechanisms used were then subjected to “self-testing” by Project beneficiaries before being further disseminated.

- *Local participation:* SUBIR was designed on principles of local participation because the history of natural resources management initiatives around the world has shown that, when these are designed and implemented from the capital city or provincial offices without taking the views of local people into account, they typically fail. Therefore, Project activity counterparts (executors) ideally are community groups or second-level organizations. Where and when appropriate, staff from locally represented governmental organizations and nongovernmental organizations are also included. SUBIR's aim is to act as a counterpart and a catalyst: One of its main objectives is to strengthen self-management capacity.

- *Training:* Since self-management is a key factor in the sustainability of natural resources management interventions implemented by primary resource users “on the ground,” training and consulting are key technologies and information transfer tools for all SUBIR components. Especially important is the “training of trainers” so as to institutionalize different skills at the local level.

- *Integration across components:* The objectives of the various SUBIR components are closely interrelated in terms of interlinking protected areas, their zones of influence, and the users of the biological resources in those areas. SUBIR seeks to strategically integrate activities under the different components by geographic zone and executor organization within a given time frame. Finally, with relation to its plan of gradual implementation, Project support for the different components is keyed to local capacities and priorities so as to avoid an excess of “initiatives” and to allow for sound development and adaptation of activities with real local participation.

2.4. The Phase I Evaluation

2.4.2. Evaluation purposes and issues

As set forth in the evaluation scope of work, the purpose of this Phase I evaluation of the SUBIR Project is to provide the following information (abstracted from the scope of work; see Annex A).

A. An analysis of Project progress toward: USAID/Ecuador's Strategic Objective 4, Phase I objectives set forth in the Project Paper, the Project Monitoring and Evaluation Plan, and SUBIR annual work plans as defined by outputs, purpose, and goal statements.
B. Recommendations to improve management operations at all levels, the use of Project resources, and the quality of outputs.
C. A recommended rate at which Phase II activities should proceed and an assessment of the

prospects for sustainability of SUBIR-style activities after USAID funding ends.

D. A forward-looking needs assessment of the Mission's natural resources management strategy and Ecuador's civil society that can be met by SUBIR.

In addition, as per USAID Evaluation Handbook requirements, the evaluation seeks to determine the overall relevance, effectiveness, efficiency, and impacts (both positive and negative) of the Project. Beyond these general evaluation needs, a total of 51 more specific queries were posed in the scope of work plus a large number of Phase II design issues (Annex A). Still more issues, and even broader ones of Mission-wide relevance were raised in the initial USAID/Ecuador briefing of the evaluation team.

This report is organized in order to deal, first, with component-specific evaluation issues. Then, building upon findings from all components plus findings pertaining to Projectwide operations and approaches, the concluding chapters address the larger evaluation issues posed in the scope of work, in USAID briefings, and in evaluation team analyses.

2.4.4. Context and methodology of the evaluation

The Phase I evaluation reported here was undertaken between 4 April and 4 May 1994, making for approximately 4.5 weeks in what was initially intended as a 6-week evaluation. The evaluation team was composed of four senior consultants, all US citizens, with no prior connection of any sort to the SUBIR Project. Annex A's scope of work details the range of skills and expertise represented on the team. Additional expertise was lent in analysis and write-up by a fifth, short-term team member from the United States.

Because of the tight timeline vis-à-vis the vastness of SUBIR activities and work sites, after an initial whole-team field sortie to the Borja area of Cayambe-Coca Ecological Reserve for team-building and coordination purposes, for further fieldwork the evaluators divided into two subteams of two experts each so as to embrace a maximum of SUBIR activities, sites, participants, and beneficiaries. This resulted in a total of 33 person/days spent in evaluating SUBIR field operations. For final report preparation, dual writing and analysis responsibilities were then assigned to a different two-person subteam such that each section of the text had the benefit of input from every field site visited. The evaluation methodologies employed in gathering data for the present report were wideranging and included the following.

- Direct inspection of, e.g.: SUBIR demonstration plots, sites for interpretive centers, park-guard buildings, ecotourism operations, etc., as well as of Project Offices, equipment, and other infrastructure.
- For work with nongovernmental organizations, second-level organizations, and community participants, elaboration and systematic application of an interview guide on the organization's experiences, benefits, future recommendations, etc. from and for SUBIR activities.
- An exhaustive review of Consortium, Project, USAID, USAID/Ecuador, Government of Ecuador, nongovernmental organization/second-level organization, private enterprise, and

still other documents, maps, office files, and correspondence, staffing rosters, etc. (see Annex C, List of Documents Consulted).

- Methods of oral history, with attention throughout to "triangulation," i.e., verification by different team members from different informant sources.
- Compilation and analysis of Project financial data.
- Rough field calculations of economic benefits and opportunity costs of Project production activities.
- Open-ended individual and group interviews—mainly in person but also by phone—both with Consortium representatives in the United States and, in Ecuador, with the entire panoply of actors in environment-and-development issues (see Annex B, List of Persons Contacted).
- In some instances, compilation of quantitative measures (e.g., on numbers of activities, communities, beneficiaries, publications, and other products, etc.) from primary Project data sources (due to the lack of a functioning management information system within SUBIR).
- In the case of ecotourism, participant observation in the form of stays at or nature hikes through potential ecotourism facilities and sites.

In total, 108 professional person-days were expended on the evaluation by the team. More than 100 documents, maps, etc. were reviewed. And 300 individuals representing some 50 local, regional, national, and international organizations pertinent to the SUBIR Project were contacted.

4. Project Management, Administration, and Monitoring

4.2. Project Management

4.2.2. Project management at consortium level

The SUBIR Project is being implemented through a three-member consortium with several layers of Project administration. CARE/Ecuador is legally responsible for the management of Project funds. CARE also signed subcontracts with the other two consortium members, The Nature Conservancy and the Wildlife Conservation Society, outlining technical and managerial responsibilities, technical assistance inputs, complementary funding and fund-raising targets, and administrative obligations.

The three members formed a Consortium Executive Committee to provide overall guidance and oversight for activities undertaken under the cooperative agreement. Each committee member develops strategies and takes the technical lead over Project components related to that organization's capabilities. CARE manages improved land use management and organizational strengthening; The Nature Conservancy maintains responsibility for protected areas management and ecotourism; and the Wildlife Conservation Society directs research and monitoring. CARE/Ecuador maintains administrative responsibility, while the SUBIR Project Office maintains coordination over all components. The committee meets quarterly, in Ecuador and in the United States, to discuss policy and the overall thrust of the Project.

The administrative structure includes an additional management unit called the Project Implementation Committee. Membership includes three original members, the SUBIR Project Officer in USAID/Ecuador, the director of INEFAN, and the SUBIR Project Coordinator. An additional member, a representative from the nongovernmental organization umbrella organization Comité Ecuatoriano para la Defensa del Medio Ambiente (CEDENMA), was added in response to demands from the nongovernmental organization community for greater national participation in the implementation of the SUBIR Project. CEDENMA participates with voice, but with no vote.

The Project Implementation Committee is designed to act as a board of directors of the SUBIR Project. It should provide Project oversight and guidance, define implementation strategies, approve work plans, facilitate collaboration with other entities, resolve administrative and political impediments to Project implementation and approve terms of reference for Project evaluations. The Project design envisioned monthly meetings of the committee, but meetings have in fact been intermittent, diminishing the role of this body. The committee represents the only Ecuadorian involvement in policy level management in the SUBIR Project.

Several management issues present themselves because of the structure currently in place to implement the SUBIR Projects. These issues include:

Duplication of effort between the Project Implementation Committee and the Consortium Executive Committee.—In essence the Project is functioning with two boards of directors, since

both committees are established essentially to provide policy and strategic guidance to the Project. This redundancy leads to confusion, delays, and a loss of efficiency in the management of the SUBIR Project. Moreover, in practice it has led to strong Consortium Executive Committee participation and a very limited role for the Project Implementation Committee with regard to the implementation of the SUBIR Project.

Conflict in management approaches.—CARE, the lead institution, is attempting to systematize all aspects of Project management and administration. Not all members of the consortium are in agreement with CARE policies and prefer to handle hiring and salary issues separately. This incompatibility is disruptive to Project management and causes both conflict and confusion within staff;

Delays in decision making at the consortium level.—Important program-related issues require consensus decisions by the consortium, with a single member holding veto power over a Project initiative. Lack of consensus has affected potentially beneficial work with the petroleum industry, while forestry activities have had to wait six months for the development of a consortium policy statement on forestry. Delays have limited the Project's ability to respond to pressures on resources in a timely manner.

The evaluation team has noted a general frustration with the present management system. As designed, the management system creates a confusing situation wherein the SUBIR Project Coordinator is responsible to USAID/Ecuador, the Consortium Executive Committee, and CARE/Ecuador. Action on substantive issues requires at least the approval of both USAID/Ecuador and the consortium, and consortium decisions must represent a consensus of the three members. SUBIR Project management also reports that consortium members often deal directly with component coordinators on some issues, thereby skirting the Project Coordinator and causing coordination problems within SUBIR. This multitiered management structure as practiced hampers Project implementation, especially because the consortium and USAID/Ecuador often did not agree on approaches.

The situation became particularly acute when the Consortium Executive Committee, USAID/Ecuador, and the CARE/Ecuador director noted serious management deficiencies in the Project and each felt compelled to exercise legitimate control. The competing lines of authority coupled with efforts to improve Project implementation led to conflict, morale problems, and paralysis. The evaluation team recommends a rethinking of the present Project management scheme for the remainder of Phase I into Phase II and alterations to increase efficiency and allow the lead organization and SUBIR's designated Project Coordinator the flexibility and autonomy needed to carry out its administrative and technical responsibilities. Several management options are listed below with their benefits and limitations.

Alternative I.—Maintain the present system with changes in structure to address the problems referred to above. Suggested changes would include the elimination of the consensus decision-making system in the Consortium Executive Committee in exchange for decision by two-thirds majority and the establishment of time limits for decisions by the Consortium Executive

Committee. Requests for policy decisions would emanate from the SUBIR Project Office to the Consortium Executive Committee, and the committee would need to respond within a certain time frame. Failure to do so would defer the decision to the Project Implementation Committee and the SUBIR office. USAID management guidance would flow through the monthly Project Implementation Committee meetings. Success of this alternative also requires compatibility between the personnel and salary policies of each of the entities. The obvious approach is adherence to established CARE policies by all consortium members.

The benefits of this alternative include consistency in Project operation and the active participation of the consortium members in the management of the Project. Consortium support in contracting technical assistance as well as financial contributions to SUBIR related activities will continue to aid Project implementation. The Project can also gain from the international stature of participating environmental nongovernmental organizations and from the knowledge and expertise that the consortium members bring to the implementation and policy process. Limitations exist in that the system does not address the potential duplication of management effort and the problems of having too many people trying to influence the direction of the Project. The Consortium Executive Committee and the Project Implementation Committee would still be in conflict regarding their roles unless roles they are precisely defined. The Project Implementation Committee enjoys geographical proximity and is in a position to provide more timely guidance, arguing for an expanded role. Serious questions arise regarding the economic justification of the Consortium Executive Committee given the operational costs involved and its level of contribution to the Project. Although the Consortium Executive Committee has made positive contributions to the Project, the team questions whether the cost of maintaining a Consortium Executive Committee justifiable.

Alternative II.—Under this alternative CARE would undertake the entire management of the SUBIR Project and run it in a similar fashion to other CARE projects. This scenario is consistent with the fact that CARE, as signatory of the Cooperative Agreement with USAID/Ecuador, is legally responsible for the implementation of the SUBIR Project. Under this alternative CARE would contract out components, for which it has no comparative advantage, to other nongovernmental organizations who can provide the required technical assistance. Preference would be given to existing consortium members based on the design of the Project in Phase II. The subcontractees would provide assistance in Project design and implementation, and would provide names and curriculum vitae and input into selection of personnel involved in the management of the SUBIR Project. However, all personnel would be employees of CARE and would follow CARE personnel guidelines.

The Consortium Executive Committee would cease to exist under this scenario. Each subcontractor would provide Project guidance through technical assistance for design and work plan development its area of expertise. Each also would provide technical and contracting assistance as required. Moreover a mechanism would need to be established for a yearly meeting among partners to discuss policies and strategies and mid-stream corrections as required. The Project Implementation Committee will serve as the Board of Directors for the SUBIR Project and provide implementation and policy guidance and approval of work plans. USAID/Ecuador's

management input would occur at this level.

This alternative benefits from simplicity. Duplication of Project management will be removed and the implementation of the SUBIR Project will be brought under one management scheme. Subcontracts would be negotiated to ensure the active involvement in design and implementation of the other partners. A potential limitation that arises is the loss of commitment to the Project by partner groups who would view themselves as only subcontractors rather than as core management entities. This issue could be a concern if a diminished commitment to providing economic and logistical support to the specific components arises. Also conflict could arise if the partners felt that CARE was trying to exert total control over the Project and operated against the interests of the other institutions. The Consortium Executive Committee feels that the process has developed synergy and creativity, which could be compromised if management is dominated by one group. This point is important; a process needs to be developed that involves the partners in policy discussion, monitoring, and strategy development. The current relationship of the Wildlife Conservation Society to the Project indicates that this potential limitation can be overcome. A possible alternative is a yearly Project meeting in Ecuador to review activities, discuss policies and policy initiatives, and establish yearly strategies and objectives.

Alternative III.—The present structure could be completely modified and USAID/ Ecuador could sign separate cooperative agreements with each member of the original consortium (or other institutions). In this case, each of the members would be responsible to USAID/Ecuador for the implementation of specific components and for financial management. Guidance would come from a Project Implementation Committee that was made up of the various grantees and current members.

The benefit of this approach is that each nongovernmental organization is responsible for specific funds and activities and can exercise control consistent with its institutional modus operandi. Conflict on the management side would be eliminated. The negative side is that each of the nongovernmental organizations would have to assume responsibility for the management of a cooperative agreement. The result is more administrative work for each of the nongovernmental organizations and for USAID/Ecuador. Programmatically this approach threatens integration of components and loses the synergy that an integrated Project offers, as the entities are more inclined to promote individual objectives. Successful management of this alternative will most likely require a presence of each institution in Ecuador and a greater administrative role for both the Project Implementation Committee and USAID/ Ecuador. Discrepancies in approaches to management of the Project will be exacerbated as each nongovernmental organization attempts to exert control.

Alternative IV.—This approach is similar to the one above with the difference that an additional entity, such as a management consulting firm, would be contracted to provide administrative and financial management services, as well as serve as a coordinating body for nongovernmental organizations or other appropriate entities under subcontracts. Under this structure lines of authority and responsibility are defined clearly. This alternative could have several contracting

permutations that could include the use of cooperative agreements for all entities, or a mix whereby the management firm receives a contract to pull together the work of nongovernmental organizations working under cooperative agreements. Once again the role of Project Implementation Committee will be important for providing policy and implementation guidance. The benefits are similar to those mentioned above with the addition that the potential for integration and coordination increases with the administrative super-structure. The complication of the contracting arrangements, as well as the probable need to reinitiate the Project bidding process argues against this approach. It is also difficult to assess whether the administrative organization will be able to coordinate the activities of the disparate groups and to insure compliance with financial and contracting regulations.

Alternative II with CARE as the lead agency and the elimination of the consortium management structure represents the most efficient approach. CARE/Ecuador offers constancy to a Project that has suffered from serious turnover, and CARE currently has the financial and management systems in place to oversee Project efforts. Adoption of alternatives III or IV would result in serious disruptions and further delays in Project implementation.

As part of alternative II, the Project Implementation Committee must begin to assume a more important advisory role. The Project Implementation Committee has an Ecuadorian presence and provides an potentially ideal forum for discussion between USAID and both Ecuadorian nongovernmental and governmental institutions regarding policy that needs to be addressed to achieve the sustainable use of resources and the protection of biological diversity. The Project Implementation Committee should also be the forum for USAID/Ecuador to provide Project implementation guidance and direction to CARE and the SUBIR Project Coordinator.

4.2.4. Project management at SUBIR office level

The present management system consists of a Director, component coordinators, and support staff. Each of the five components has a coordinator who is responsible for the development of that component in each of the four Project Offices. This decentralized structure favors development of the individual components, but does not necessarily contribute to the integration of the components at the field level. Field coordinators could conceivably fill this role, but visits to the various field offices did not indicate a high degree of coordination. The team also formed the impression that the field teams did not feel intimately tied into the programmatic process occurring in the Quito office.

Increased integration may be achieved through Project management changes in the SUBIR office. Instead of management strictly by component, coordinators could be responsible for both a component area as well as for a regional office in order to serve as a liaison with that office. Under this design each field office would have a Quito office liaison person, who also has the technical skills needed to manage one of the components. SUBIR would assign coordinators to act as field office liaisons to those areas where their special expertise is most needed. For example, an agriculturalist could take responsibility for the land use management component as well as serve as the manager for a field office where agricultural development represents a major thrust of SUBIR's activities. The agriculturalist would focus on agriculture for the zone as well as

work with the field officer coordinator in designing field activities that integrate all components. The agriculturalist would serve as the point person for fielding requests for assistance from the other component managers and would insure monitoring and control of all activities in the zone and maintain the information on all Project activities and accomplishments. He/she would also provide assistance to other regions as needed.

Since there are fewer field office sites than components, some coordinators would maintain only component responsibility, or could serve as Deputy Directors for specific activities to help ease the work load on the Project Director. Decisions on assignments would be based on a strategic planning process linking skills and needs to areas where they will be most needed.

4.2.6. Project planning

The initial conception of SUBIR proposed a highly developed planning system closely integrated with monitoring/evaluation and actual implementation. Planning was intended to be so thorough and comprehensive that in fact it can be thought of as total Project management rather than simply planning.

This system was intended to utilize information garnered from an extensive knowledge about field conditions in the chosen protected areas, generated both through in-depth professional research and analysis, as well as local knowledge and preference; a bottom-up planning system that incorporates the above knowledge; decentralization of Project planning (and implementation); a flexible and rolling planning/implementation effort that allows for rapid response to changing conditions and needs; and a process that allows for experimentation in activities design, implementation, redesign, and assessment.

The original idea envisioned a limited number of core staff called component coordinators who would be responsible for generating information that went into the plan, assessing it and deciding which activities to fund and implement. The planning system also required that everyone be a de facto planner and an evaluator since each coordinator was also responsible for entering data about activity implementation into a management information system. Finally, the coordinators were also required to be implementors, directly managing or supervising implementation of activities.

The reality of SUBIR planning has turned out to be somewhat different from that initially envisioned. Some of the planning, i.e., basic studies, data gathering and analysis, and development of plans, has been carried out in a manner fairly consistent with the initial conception. It must be noted, however, that planning documents have not been produced in time frames consistent with the initial schedule. That is, instead of a regular one year operational work plan, there have been a number of short-term work plans, especially in the first implementation year, 1992.

Much of the time of the second Project Coordinator has been devoted to attempting to bring some order into the reporting system and to provide at least a narrative and quasi-quantitative basis for understanding Project progress and results. This has at best resulted in an *ad hoc* process marginally unsatisfactory to everyone, for mostly different reasons.

The Project Paper proposed the creation of several interorganizational coordination

committees to generate data for planning purposes, assist in implementation, and promote the transfer of knowledge to potential users. To be composed of relevant Ecuadorian conservation and development agencies, they were intended to operate at both the national and regional level (see figure 2.1). None of the coordination committees were ever created. Attempts were made to establish working committees at the regional level but were abandoned when it was determined that Ecuadorian agencies were not particularly interested in meeting to discuss issues of low priority to them.

Although these committees could have played a significant role in the planning process, potential members felt no compelling reasons for attendance. At the national level, a surrogate for the national interinstitutional coordination committee was developed after long negotiation between SUBIR and various Quito level environmental nongovernmental organizations. The result was the inclusion of CEDENMA, the national "umbrella" environmental nongovernmental organization, as a participating member on the Project Implementation Committee, with right to voice opinions but not to vote. The presence of the CEDENMA representative promises to be a positive future benefit to SUBIR planning efforts and coordination, but it is only now beginning to have some effect.

4.2.8. Rationale and support for selection and design of Project activities

Decision making for Project activities selection can be divided into two broad areas: geographical and functional (by component). Broad geographical decision making occurred during the initial Project design phase in which most of the protected areas of Ecuador were examined and ranked according to a series of criteria including: importance of biodiversity; threat and vulnerability, cultural values and ethnicity; national importance; endemism; local interest, and feasibility in terms of access and logistics and implementation costs. An initial short list of a eight protected areas was further evaluated by these criteria and three Project areas chosen.

Low-level planning decisions in terms of choice of sites for Project intervention within the three protected areas and their buffer zones, as well as allocation of activities by component, were done as a result of the diagnostic phase studies carried out at the end of Project planning phase (1991). Major teams (up to ten persons) were assembled for each of the three protected areas and further diagnosis of need and potential carried out. This process served as a basis for the identification of both specific activities for implementation by SUBIR and for selection of activities to be implemented through contracts with Ecuadorian organizations, primarily nongovernmental organizations.

The underlying rationale behind Project design is focused on four major problem areas identified within the Ecuadorian context: general lack of knowledge and strategies for biodiversity protection and promotion of sustainable utilization of natural resources; limits on human resources to carry out necessary interventions; and constraints and limitations in the policy and institutional environment. The former two are the basis for the bulk of the work in Phase I of SUBIR, cutting across all five of the core components. Institutional and policy constraints have been the focus of intermittent development efforts that have been thwarted by

both external and internal complications. They are discussed more fully in the chapters that deal with organizational development/interorganizational concerns and the chapter on policy. Whether these four identified problems are indeed the appropriate ones to deal with may become evident when SUBIR carries out thorough evaluation of its activities.

4.4. Administration

4.4.2. Personnel issues

Throughout its lifetime the Project has been able to attract high-level national and international professionals, unfortunately many have not remained with the Project. No one particular reason for the turnover appears to dominate, but the rate of turnover has been high. Reasons cited include personality conflicts, salary, other professional opportunities, dissatisfaction with management systems, and lack of leadership. This turnover may be one of the major contributing factors to the Project's lack of achievement in some areas, particularly in the lower Cotacachi-Cayapas Ecological Reserve. The SUBIR Project needs to have consistent management through the end of phase one and into phase two. Project management staff also needs to take action to insure that capable people are placed in positions of responsibility to avoid implementation delays.

All Project positions have job descriptions and they are required for all contracting, according to the CARE personnel system. Unfortunately, the Project has some staff in positions for which they are not qualified and that has caused delays in the implementation of Project activities. A serious gap exists between the type of work proposed by the SUBIR Project and the technical capacities of the staff. The lack of any agricultural expertise in general, and in tropical agriculture specifically represents a serious limitation to programming and technical assistance under the land use management component and should be rectified. The lack of economic analysis and marketing skills on staff hampers efforts in the forestry, ecotourism, and craft activities contemplated under the SUBIR Project.

Prior to arrival of the present CARE Director and Assistant Director, the salary and personnel policies in SUBIR were not applied systematically. As of the beginning of 1994, CARE/Ecuador began to organize personnel and salary systems. Policy guidelines on all aspects of hiring personnel have been distributed. The policy is comprehensive and includes mechanisms for attracting both men and women to positions with SUBIR.

Salary scales with established grades and steps were also introduced in 1994 and are pegged to level of responsibility, prior experience, level of education, and length of professional experience. The grades and steps were established after a salary survey of other nongovernmental organizations and bilateral and multilateral organizations, and are consistent for all CARE/Ecuador projects. CARE/Ecuador believes the salaries are consistent with what other organizations involved in similar work pay their staffs. Each person hired will fit into a grade and step according to job descriptions and titles. The rates are adjusted quarterly to reflect inflation. Previously, job titles and pay scales diverged for people carrying out similar positions and staff resentment resulted. These inconsistencies were being addressed at the time of the evaluation.

Short-term consultant rates that average $170.00 per day are established in SUBIR.

The evaluation team heard complaints regarding the difficulty of attracting high-level people with scarce skills to manage Project activities. The team determined that CARE/Ecuador has sufficient flexibility built into its salary system to respond to special cases. This flexibility involves paying salary supplements or hiring expertise through long-term consultancies. These decisions can be made on a case by case basis, but must be justified in writing between the SUBIR Project director and the CARE administrative staff. Justification for a waiver from the adherence to the salary system would be based on previous salary history, the employee's special skills or other justifiable circumstances.

CARE recently issued personnel review guidance and training in this aspect will be provided to all CARE/Ecuador staff, including SUBIR Project staff. The guidance provides for annual performance reviews and promotion systems for employees. Opportunities for professional development are available to SUBIR staff, both in terms of short-term as well as long-term training.

4.4.4. Contracting

Although subcontracting and procurement procedures were lax at the beginning of the Project, CARE/Ecuador took steps to improve them in the last quarter of 1993. Contracting and subcontracting procedures are consistent with USAID regulations and are outlined in manuals available in the CARE/Ecuador office. However, the team found no manuals in either the SUBIR Project Office or in the regional project offices. The team also discovered that key SUBIR staff were unaware of basic regulations and procedures. The team recommends in-house training of SUBIR by CARE/Ecuador in these systems, including the SUBIR main support staff.

4.6. Financial Management

Financial reports are received from SUBIR field offices by day 18 of each month and complete Project reports are prepared by day 20. Monthly reports are provided to USAID outlining expenditures against budget line items. These reports are supplied to CARE/Atlanta for processing and inclusion of overhead and consortium core costs. Unfortunately, the consortium core costs are not itemized and the level of expenditure per specific items cannot be determined. The team believes that financial controls are transparent and adequate for Project reporting.

CARE/Ecuador appears responsive to problems that arise in financial management. Currently it is developing a flexible response to the lack of a bank in Borbón, by looking for a more agile cash management system where checks are not routinely circulated or accepted. This system will have adequate controls and security to insure its operation.

The Project has not installed systems to monitor and control the counterpart contributions called for in the CA. According to amendment #2 to SUBIR contracts with the Wildlife Conservation Society and The Nature Conservancy of 22 January 1993 and reported in a 26 May memorandum, the Wildlife Conservation Society committed to a counterpart contribution of $43,000, and The Nature Conservancy $184,263 as shown in Table 2.1. No specific amount was

provided for the CARE counterpart contributions. Component coordinators report receipt of 25 percent contributions in labor and local materials for Projects implemented in the project regions, but documentation is lacking. The amount of counterpart contribution from Consortium Executive Committee members was not precisely documented, except for the case of the Wildlife Conservation Society, which had reported figures and use of funds detailed by yearly contribution. SUBIR staff provided the contributions from other members through a file search or from memory. SUBIR Project Coordinators also provided details on matches from international organizations, local nongovernmental organizations, and Ecuadorian private sector entities upon request from a search of file. The lion share of matching contributions ($444,852) comes from the Research and Monitoring component, which has been able to attract significant support from outside the Project. All relevant figures appear in Table 2.1.

Table 2.1 Counterpart Contributions by Consortium Members during Phase I

Institution	USAID Funding	Counterpart Commitment	Counterpart Provided	Percent of Commit.
Wildlife Conservation Society	$231,344	$43,000	$65,223	152%
The Nature Conservancy	$409,685	$184,263	$81,000	44%
CARE PROMUSTA/ CARE SUBIR	$4,231,024	N/A	$100,000 $ 20.000 $491,961[2]	N/A
INEFAN	$0.00	N/A	$350,000	N/A

2 This total represents funds provided by groups such as World Wildlife Fund, Yale University, Ohio State University, Fundacion Jatun Sacha, Ecociencia, and others. The funds represent monies other groups are putting forward to support SUBIR activities. They are placed under CARE in general since CARE is the responsible entity. The total amount of funds directly provided by CARE/Atlanta is $100,000, while $20,000 has been provided by the PROMUSTA/CARE project.

The Wildlife Conservation Society funds went to support Ecociencia and other nongovernmental organizations, and included the purchase of a vehicle for Ecociencia. The Nature Conservancy support was for two vehicles, Project activities in Cayambe-Coca and Yasuní, and a training course in the Dominican Republic. CARE's $100,000 contribution was

destined for administrative expenses and was made by the main office in Atlanta, while the PROMUSTA/CARE contribution of $20,000 supported activities in the upper Cotacachi-Cayapas Ecological Reserve. The other $491,961 represents the counterpart contributions from international nongovernmental organizations and private sector groups that have provided funds directly to support SUBIR field activities, of which 90 percent corresponds to support to the Research component. Community counterpart contributions could not be assessed because of the lack of tracking within the Project. The Government of Ecuador does not directly receive funds from the SUBIR Project but makes a contribution through INEFAN's activities. Amounts of the Government of Ecuador contribution in terms of INEFAN support to SUBIR was $350,000 during Phase I.

As evidenced in Table 2.1, the subcontractors have contributed to the Project in financial terms, and the Wildlife Conservation Society has more than satisfied its commitment to the Project. SUBIR staff has praised the logistical, contracting, and technical support provided by the Wildlife Conservation Society during Phase I. The majority of counterpart contributions result from funds that the SUBIR Project has been able to attract through its collaborative efforts with groups supporting activities in Ecuador.

4.8. Project Monitoring and Evaluation

From the very beginning, Project monitoring and evaluation has been seen as a critical—and absolutely essential component—to SUBIR's style of Project planning and implementation. Progress and impact monitoring and the management information system are key components of the overall management and planning process. Their importance is clearly specified in the Project plan, where both Project and progress monitoring (or tracking) as well as impact monitoring were identified as key activities. Project monitoring was to be based on regular financial, progress (milestones and completion rates), and narrative reporting. Impact monitoring was to be based on indicators developed during diagnostic baseline studies and done on an annual basis for some indicators, and on a longer cycle for others. Both forms of data were to be brought together in an annual internal evaluation effort that would assess ongoing implementation, serve as a basis for evaluating technical interventions, and determine appropriate Project modifications. These formal evaluations were to serve as a principal input into the coming year's work plan. All information was to be channeled through the management information system.

In the initial year of SUBIR's implementation efforts (1992), extensive efforts were undertaken to design an effective Project monitoring and impact evaluation system suitable both for SUBIR's internal needs and USAID's Strategic Objectives evaluation. Based on those discussions, draft material for impact evaluation, including goals, targets, and indicators were developed by CARE/Ecuador and outside consultants. SUBIR staff state they are waiting for the final version. USAID is waiting for SUBIR to do impact evaluation. No basic impact monitoring and evaluation has been carried out. A rudimentary management information system (“bean counting” in common SUBIR parlance) for activity monitoring on a quarterly and annual basis is in place.

The results achieved to date appear somewhat useful, if relatively limited. (There are still

major problems of data verification and quality control on how different staff calculate completion percentages). Nonetheless, this level of accomplishment has required a great deal of time and attention on the part of the second SUBIR coordinator—and still there is no real management information system.

Among the necessary time-consuming activities are: component and regional staff have had to be convinced of the utility and need for regular data submission; and reporting requirements for USAID and for CARE have had to be standardized.

The initial Cooperative Agreement called for six-month reports for SUBIR, consistent with USAID reporting requirements. In order to promote better internal evaluation of ongoing progress, the second SUBIR coordinator decided that quarterly reports were essential. Recently a report format that was acceptable to both SUBIR and USAID had been accepted by CARE/US; unfortunately, however, in the future a different format is being required by them. In addition, the coordinator has worked to integrate financial reporting into the narrative and "bean counting" system. This too has taken extensive time due to different reporting formats used by SUBIR, CARE/Ecuador, and CARE/US. Only now are some achievements being seen.

In addition to attempting to upgrade both the frequency and the usable nature of the information in the SUBIR reports, the coordinator and SUBIR staff have finally been able to bring on line one of the initial components of the planning and evaluation system—the annual evaluation. The first of these evaluations occurred in December of 1993. Although the meeting turned out to be as much a sensitivity session as an evaluation of SUBIR accomplishments, the meeting did achieve limited objectives, specifically reviewing all Project activities and making recommendations for the next annual work plan. Essentially, activities not yet started were eliminated, and occasionally separate activities were combined.

In spite of the above advance, there has been no progress in terms of impact (or qualitative) evaluation. This means that USAID/Quito still has no means for carrying on its own Strategic Objective impact evaluation of progress toward meeting environmental and natural resource goals.

In attempting to assist SUBIR and move for total implementation of Project evaluation goals, a short-term (two weeks) consultancy on SUBIR's management information system efforts was carried out in January of this year. In large part a diagnosis of current problems and the generally low level of accomplishment, the study also makes a series of recommendations. The evaluation team concurs in the identification of problems and need for significantly increased monitoring and evaluation activity within SUBIR. Not all recommendations are fully shared by the evaluation team, but the overall conclusion that significantly greater resources must be dedicated to evaluation and information efforts is fully shared.

4.10. Recommendations

- Place management authority under the control of one organization that subcontracts to collaborating institutions for technical assistance. CARE/Ecuador is the logical choice as the implementing organization. CARE provides continuity in Project management and implementation, has a long-term presence in Ecuador, and is the signatory of the present Cooperative Agreement, with legal responsibility for the Project. CARE has adequate administrative structure in place to manage the Project and can provide cost-effective Project management; the team sees no need to alter the basic contract arrangement.

- Establish the Project Implementation Committee as the Board of Directors of the SUBIR Project. The Project Implementation Committee will function as an advisory committee to CARE/Ecuador USAID/Ecuador and will have no responsibility for Project management oversight, which will revert directly to CARE/Ecuador and USAID. Under the new design, eliminate the role of the Consortium Executive Committee, while insuring regular meetings and active participation of the Project Implementation Committee. The Project Implementation Committee represents the only Ecuadorian policy level presence involved in the SUBIR Project and this participation should be promoted. USAID/Ecuador may need to take a leading role to foster and stimulate substantive Government of Ecuador participation through INEFAN.
- Change the name of the *Project Implementation Committee* to *Project Advisory Committee* to denote more clearly its role in the SUBIR Project.
- Strengthen the Project Advisory Committee and ensure regular meetings so that it can effectively operate in both a advisory as well as a policy dialogue role to support the objectives of the SUBIR Project.
- Under a new system CARE/Ecuador will need to subcontract technical support and guidance from environmental nongovernmental organizations and organizations with technical experience in areas or components where it does not have a comparative advantage (tropical agriculture, natural forest management, park management, etc.) Phase II redesign should assist CARE in identifying potential collaborating organizations sometime during the August-September, 1994 period, which could then participate in the redesign process. One or both of the present consortium members could act as collaborators. The present arrangement with the Wildlife Conservation Society offers a highly satisfactory management model that could be easily replicated.
- CARE/Ecuador should develop a mechanism whereby its partner organizations can provide input into the Project's strategy and policy development as well as review and monitor ongoing activities. One possibility is a yearly meeting in Ecuador with the SUBIR staff to review previous year's activities and to develop the work plans for the subsequent year. Input from the partner organizations may prove invaluable given the complexity of the Project and the natural resource/economic conflicts that will ultimately arise.
- The structure of the SUBIR office should be changed to assign component coordinators field office supervisory responsibilities. Each component coordinator will maintain a required technical specialty and oversee activities at the field level office to promote better coordination among Project components. Those component coordinators with no field office responsibilities will serve as Deputy Directors for specific activities.
- SUBIR needs to insure that competent staff is hired to implement component objectives. The land use component would benefit from a competent forester or tropical agriculturalist and capabilities in marketing and/or economics will help stimulate marketing for forest products, crafts, and ecotourism sites.

- CARE/Ecuador should ensure that its present salary structure is adequate to attract and keep competent technical staff. It should utilize present options to adjust salaries, or devise an additional salary system to address the need to attract scarce skills to the Project.
- CARE/Ecuador needs to provide in-house training to SUBIR Project staff on all management and personnel systems and policies to insure compliance with USAID regulations.
- CARE/Ecuador should insure that all relevant personnel and contracting manuals are available in SUBIR Project Offices.
- SUBIR needs to establish systems to monitor counterpart contributions from communities and nongovernmental organizations participating in the program. A system should also actively monitor contributions from the consortium members, especially in the compilation of information required for reporting on Phase one activities.
- CARE/Ecuador needs to build flexibility into its management systems, and where it exists, make it known to SUBIR managers. A decentralized system allowing sign-off by responsible coordinators for purchases and expenses, rather than only the Project Coordinator should be instituted.
- For planning and implementation to be improved, there must be better data available about Project accomplishments to date.
- Information and evaluation capabilities must be vastly improved if Project goals are to be achieved, and reliable and transferrable information is to created.
- Concomitant to the above recommendation, component coordinators cannot be expected to maintain planning, implementation, and evaluation responsibilities. Additional staff or regular outside assistance is necessary, to both provide adequate personnel resources and to more thoroughly train all staff.

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Box 1–1. Outboard motors for Coca

A SUBIR field office coordinator's lack of understanding of CARE Ecuador's procurement procedures and the rigidity in the application of procurement regulations led to inefficiencies in the purchase of outboard motors in SUBIR's Coca office. In this case the field office coordinator requested the purchase of two outboard motors from the Quito office and provided three quotations from vendors in Coca. Since the total cost was 300,000 sucres higher in Coca than Quito, CARE/Ecuador's purchasing department decided to purchase the motors in Quito and ship them to Coca. Since the Coca field personnel needed the motors immediately, they spent 1,000,000 sucres in rental while waiting for the motors to arrive. The, eliminating any savings. Had the field coordinator known procedures or been informed of flexibility in procurement for equipment needed immediately, he could have sent a letter of justification for local purchase of this equipment and saved the Project 700,000 sucres.

6. Organizational Development

6.2. Component Purpose and Strategies

According to the Project Paper (p. 24), this component "focuses on the empowerment of local communities and resource users to deal effectively with issues affecting conservation" while also "strengthening ... private, public and nongovernmental organizations." The specific objectives are to:

- Increase technical understanding among Project participants of how to develop and apply sustainable uses of natural resources that satisfy economic needs;
- Strengthen the managerial capabilities of selected community organizations, public institutions, and private parties, to carry out SUBIR natural resource activities; and
- Provide a forum to assist in the resolution of resource conflicts by providing technical information and conducting analyses of natural resource issues at local, regional, and national levels (Project Paper, p. 24).

As set forth in the Project Paper, and also as later enunciated in the strategic plan and/or as implemented, strategies for achieving these objectives have consisted mainly of the following.

- Signing agreements for the mutual provision of technical assistance and extension services to Project participants—including, most notably, technical assistance in environmental education and awareness-raising plus training in organizational management and land titling and related legal procedures.
- Providing technical training at the professional level.
- Conducting research.
- Organizing regional and national committees as fora for the coordination of SUBIR and other natural resources management-related activities (but see also Chapter 9 on Interorganizational Coordination).

In the Project Paper, this component also proposed a subcomponent on interinstitutional collaboration. Later in the life of SUBIR it was granted the status of a separate component. In either case, inter institutional collaboration has had one basic purpose, to ensure that SUBIR works together with other entities in Ecuador to ensure meeting Project goals and objectives. Individual objectives include:

- Outreach to a wide variety of Ecuadorian and international institutions at all levels of society and government to inform them of SUBIR's existence, purpose, and opportunities.
- Providing information to these institutions to assist them to better understand the context of resource management and to help them to better manage Ecuador's natural resources.
- Joining with selected institutions for collectively working together to improve

management.

- Helping resolve conflict about resource use and management at the local, regional, and national level.

6.4. Component Operation and Implementation

It should be noted from the outset that the Organizational Development component is difficult to evaluate across the entirety of the Project to date because of the abrupt dismissal of its first Coordinator, who left behind little documentation of her planning methods, field efforts, or even the agreements signed with other organizations participating in SUBIR. Worse still, central archival systems in both the Quito and regional Project Offices are such that this information reportedly cannot be retrieved. Also, the three-month hiatus between dismissal of the first Coordinator and installation of the present incumbent as of March 1993 further contributed to disjunctions in both planning and implementation of the component. The major turnover in Project personnel generally (Chapter 1) further hobbles evaluation of the early operation and implementation of this component.

That said, planning for this component during most of the LOP to date appears to have relied mainly on SUBIR's internal planning processes (Chapter 2) as they have evolved over time. However, there is some evidence that organizational development needs assessments, planning, and decision-making have at least on occasion been conducted at the local level with gender-balanced representatives of local/indigenous communities and second-level organizations. Still, relative to the fact that broad, gender-equitable local participation was a linchpin of the original SUBIR design and strategic plan, clearer evidence of local decision making inputs into component programming and planning would be desirable. The same statement applies to other components as well (see relevant chapters).

It is difficult to say to what extent Project diagnostic studies pertinent to organizational development fed into initial and ongoing component planning and decision making, since reports indicate that many of these studies were never published. However, the 1992 Annual Report presents a synthesis of all diagnostic findings. And clearly, some such data were available at least for selection of specific local groups to work with at the start-up of field operations. Furthermore, a number of the organizational development activities reported as actually undertaken in the 1992 Annual Report do appear to respond to specific socio-organizational diagnostic findings for identifiable second-level organizations and communities.

From the outset, however, planning for this component (as, indeed, for all of SUBIR) was overambitious. To illustrate, the organizational development component proposed to work with at least 16 different local groups or communities during its first year of field operations. These included, e.g.: a variety of Afro-Ecuadorian and other communities; representatives of 24 Chachi centers of the Federación de Centros Chachi de Esmeraldas (FECCHE); one stockowners' association; six “ecological organizations” and their associated municipalities; and an unstipulated number of communities in the Federación de Comunidades Unión de Nativos de la Amazonía Ecuatoriana (FCUNAE). In fact, still other sites were eventually included. Worse yet, to judge from internal planning documents, this array of groups and subsites was to increase by at

least 50 percent again during the second year of field operations (1993-94). The 17 pages listing organizational development activities in the 1993 Annual Project Report suggest that these figures may have swelled even more; but since specific sites or communities are not systematically identified in this listing, the exact number is impossible to determine.

In the 1992 Annual Project Report, organizational development activities were grouped into five programmatic areas. These original five areas are given in translation below, along with examples of the kinds of activities implemented under each.

Awareness-raising and auto-diagnosis of "the organizational situation" and the sustainable use of biological resources. Radio spots; organizational "self-diagnosis" workshops with groups representing scores of communities; design of community action plans; workshops on the analysis of problems pertaining to the use and cultural valuation of biological resources; signing of collaborative agreements between SUBIR and organizational participants, including one for preparation of a Garbage Collection and Clean-Up Project for the Town of Borbón; innumerable meetings and presentations on SUBIR between the organizational development Coordinator and local, regional, national, and international organizations, donors, and private enterprises.

Strengthening of organizational and administrative systems for programs of sustainable management of biological resources. Administration of scholarships from a Spanish foundation for a Chachi Indian to study law and for an ATAACU (Asociación de Trabajadores Agrícolas Autónomos de Cuellaje) member to study accounting; support to Cofán teachers to complete high school; auto-diagnostic workshops to verify socioeconomic survey data; signing of agreements between SUBIR and at least 16 organizations in Cotacachi-Cayapas Ecological Reserve alone; training of 27 community members of Cotacachi-Cayapas Ecological Reserve as interviewers; workshops on planning and administration with community groups; assisting groups to form boards and designate extensionists, to open bank accounts, set up accounting systems, and furnish their offices and buy outboard motors using Project funds; auto-evaluation workshops to assess organizational progress.

Strengthening of educational and training programs in the sustainable use of biological resources. Diagnostics of environmental educational conditions and curricula in Chachi and other regional school systems; signing of an agreement with the Dirección General de Educación Indígena Bilingüe-Esmeraldas (DINEIBE) to develop a pilot bilingual environmental education curriculum; development of a Quichua language pilot curriculum in environment.

Orientation in political-legal factors and the use of biological resources. "Mini-workshops" to review forestry laws with communities.

Socioeconomic and political-environmental studies in the Project areas. Socioeconomic surveys of some 40+ communities and training of local people as interviewers; workshops to

present findings of studies.

By the 1993 Annual Report, the definition of organizational development program areas is found to have shifted slightly and to have increased to 6, with the addition of a paralegal training program (see below). Much of the same kinds of activities as exemplified above reappear in the report's 17-page listing of activities, plus new ones such as: analyses of mineral, petroleum, and road-construction regulations; both general and case studies of land tenure problems; workshops on natural-resource and land-titling laws and procedures; workshops on participatory rural appraisal techniques; workshops on communication and leadership; workshops to train trainers of trainers in various subjects; and, indeed, even a workshop on strengthening organizational strengthening! As a number of individuals interviewed by the evaluation team remarked, at this point the overall organizational development component seemed to mean mainly "workshops, workshops, and more workshops." Nevertheless, some new trends can be detected between the 1992 and 1993 reports. For example, there is a move toward increased central-office activities such as materials preparation and desk-studies. A further trend is toward increasing work with and through national-level nongovernmental organizations.

By the 1994 draft workplan, organizational development program areas have now been renamed more parsimoniously but have grown to eight—despite a December 1993 Project-internal workshop in which activities and thrusts across all components reportedly were whittled back. Briefly, the eight programs are as follow.

Paralegals: As of May 1993, the first cohort of 15 community or second-level organization leaders and members—all male—will have completed paralegal training so they can assist their home communities, federations, associations, etc. with such matters as land titling, agrarian, and natural resource law, promotion of tourism, etc. Further, they have been recognized and certified by the Ecuadorian Lawyers Guild (Colegio de Abogados). Also projected in this component are production of several bulletins and a videotape.

Legalization: Through technical assistance from nongovernmental organizations specialized in mapping and global positioning and geographic information systems, and through SUBIR-assisted dialogue with Government of Ecuador entities such as INEFAN, the Instituto Ecuatoriano de Reforma Agraria y Colonización, MAG, and the Ministerio de Bienestar Social, this program assists communities and groups with legal procedures. For these purposes, in 1994 a Project consultant in environmental law was contracted.

Social Research: The present organizational development Coordinator explained that this program would emphasize qualitative investigations to produce information immediately useful to the activities of this and other SUBIR components; it is slated to be carried out mainly by local people with analytic assistance from the Component Coordinator.

Environmental Education: Essentially, as described above.

Untitled "Strengthening": This program was explained as pertaining mainly to local-level groups. For 1994, it is slated to emphasize organizational training for women's groups in relation to other component activities such as marketing of both traditional and nontraditional forest products. A text and videotape on women's experiences in sustainable use of biological resources is also envisioned.

Strengthening of Environmental nongovernmental organizations: This program centers on training for mainly urban and/or Quito-based environmental nongovernmental organizations in such topics as strategic planning, proposal, and Project design, practical accounting, leadership, institutional communications, and image-building. In 1994, SUBIR signed an agreement with the Corporación Ecuatoriana de Organizaciones Privadas for delivery of a monthly seven-unit series of such workshops to approximately 20 nongovernmental organizations, beginning with a participatory needs assessment.

Training of SUBIR and Collaborating Organizations' Personnel:—explained as including training of SUBIR field extensionists in their duties and training for second-level organizations in organizational management.

Fundraising: This program centers on helping collaborating organizations to identify and capture funds or to seek funds via joint proposals with SUBIR.

It should be noted that, under the new organizational development Coordinator's leadership, much greater thought seems to have been given to how organizational development is to link up with and support other SUBIR components.

Regarding interinstitutional collaboration, its objectives clearly conform to the philosophy of SUBIR of attempting to encourage participation by many different groups to jointly determine how to best manage resources. Collaboration is encouraged in all the components. It does not really represent a set of separable, concrete activities that represent a component of its own (or even a separate program). In work plans and progress reports, activities for the most part relate to information sent, meetings attended, and organizations contacted, both past and future. These activities relate to efforts by staff of all components, not just that of the organizational strengthening component.

Activities specific to the component are few, but important. The first is the establishment of Interorganizational Coordinating Committees, at the regional and national levels. The purpose of the committees was to channel information to agencies and organizations concerned with natural resource use, identify problems and conflicts, provide results of SUBIR experience and activities, and achieve conflict resolution. An early focus of each regional office coordinator was to set up the regional Interorganizational Coordinating Committee for his-her region. It turned out that the regions already had regional organizations composed of government agencies and resource users (primarily agriculturalists). There was no positive response to SUBIR efforts to set up alternative committees, or even to adapt the existing committees to the purpose SUBIR intended. By the end of 1993 it was finally decided to abandon the effort to set up and utilize regional

Interorganizational Coordinating Committees as a major Project activity. At the national level, no major steps were taken to create the national Interorganizational Coordinating Committee.

A second major activity was the effort to establish a citizens network for reporting environmental problems and abuse. Although this effort does not fit into the mold of institutional relations, focusing as it does on individual citizen action, it did envision building of a chain of reporting that would lead up to agencies responsible for stopping or mitigating environmental damage. This activity likewise did not get off the ground.

A third major activity was environmental education for the military. Identified as a first year activity, this effort did not begin to effectively deliver until 1993, when Ecociencia began a series of meetings and training sessions.

6.6. Evaluation Findings and Conclusions

A number of evaluation findings and conclusions emerge from the foregoing thumbnail overview of the evolution of the organizational development component. For one thing, it seems clear that since Project start-up, this component (and indeed, SUBIR as a whole) has been geographically and, at least at the level of primary resource users, institutionally scattered and overextended even vis-à-vis the already ambitious intentions of the Project Paper designers. The evaluation team has the strong sense that organizational development activities and locales have proliferated and, until only recently, been poorly interlinked with other components in some implementation sites and subsites (especially in the lower Cotacachi-Cayapas Ecological Reserve).

As the most startling but by no means unique example, the Garbage Collection and Clean-Up Project for the town of Borbón gives testimony to the fact that early on (1991-1992) the organizational development component had a confused conception of the reach of SUBIR's mandate—which clearly is neither urban nor “brown.” This same component also helped fund publications on health and nutrition in Borbón town. Certainly, some initial modicum of “flailing about” is to be expected in a Project such as SUBIR, which operates on a rolling design with an expressly experimental mandate and which represents one of the first attempts within USAID (or virtually any other donor) programming worldwide to address integrated conservation development. But such examples as those from Borbón defy explanation. At the same time, they raise larger questions about overall Project management and decision making systems, and about hiring and performance criteria for key regional and central-office Project personnel.

Because of start-up confusions as those just described plus other factors—such as the assignment of oversight responsibilities for other CARE/Ecuador initiatives in nonnatural resources management sectors to SUBIR field staff, SUBIR's implementation of activities through other organizations who may misrepresent the Project's mandates and types of activities, and major turnovers in SUBIR staff—there is still considerable misunderstanding of SUBIR goals. In one buffer-zone town, for example, residents and even members of woodworking and other organizations singled out for future collaboration with SUBIR told evaluators that they understood SUBIR to be essentially a latrine Project. At the same time, many Project “participants” along the rivers of this zone avowed that SUBIR was a seed distribution Project.

Such findings certainly suggest some questions about Project success in raising basic awareness among buffer zone inhabitants of what environment and development—and SUBIR itself—are all about.

Fortunately, under the leadership of the new Project Coordinator and the new Organizational Development Coordinator, great strides have been made in correcting fundamental misconceptions about SUBIR's mandate, at least within the Project itself. Strides have also been made in thinking about the general interrelationship of components and about the span of organizational development programming.

In the latter regard, for example, the present Organizational Development Coordinator sees no comparative advantage for SUBIR interventions in the arena of mass environmental awareness-raising or formal environmental education. The evaluation team concurs in this assessment, given the existence of such entities as Fundación Natura and, now, USAID's centrally funded GREENCOMM Project, which is soon to start field operations in Ecuador through the national nongovernmental organization Oikos. Also under the new Organizational Development Coordinator, although program numbers are larger, programs are more tightly focused and coordinated with other components than ever before.

Certain of these programs can even be classed as “cutting edge” in the field of environment and development. A case in point is the paralegal training program. While paraprofessional programs of all sorts have gained increasing prominence worldwide alongside participatory, democratic, and bottom-up paradigms of development,[3] the creation of a cadre of community-level paralegal professionals who can act to protect their own natural resource interests and who, moreover, have won acknowledgement from the nationally established law profession is a singular achievement (see Box 3–1).

[3] Examples familiar to the evaluation team include health-worker paraprofessionals, veterinary auxiliaries, and teachers' aides.

Box 1–2. Extending the law to the people

A major initiative of the SUBIR project is the training of rural villagers in the basics of natural resource related laws and advocacy. Currently 15 trainees from representative ethnic groups attend conferences and workshops on relevant legal issues; visit various Government of Ecuador agencies to learn about the operation of State organisms; and acquire insight into and competence in juridical and administrative processes. In the process these paralegals learn about their rights and how to exercise them within the Ecuadorian democratic process. More importantly they become representatives and advocates for their community organizations when dealing with institutions whose mandates affect their lives, especially the land titling agency.

The paralegals have status too. Their program is recognized by the Syndicate of Quito Lawyers, and they will receive a signed certificate recognizing their achievement and status upon graduation. The recognition is important but the major benefit is the power passed onto to these people who never conceived how the law could work for them. They have gained the tools to stand up to arbitrary power and injustice that could otherwise lead to their manipulation and exploitation by more powerful interests.

Soon the communities represented by these paralegals will have a greater understanding of their rights to land and to the use of their resources as these paralegals pass on the knowledge gained in their training. This knowledge coupled with community calls for action can both feed into a policy dialogue and lead to the resolution of conflict over natural resources and land. Now, actions taken at the furthest reaches of the country can feed into a policy process operating in the national capital and SUBIR is the link. In addition, SUBIR will work with these paralegals and their communities to provide models that will promote sustainable use of those resources for which rights have been obtained and hopefully respond to the need to improve the economic well-being of these communities.

The only flaw evident in this organizational development program is that, to date, certain programs such as the successful paralegal and parabiologists activities, have included solely male trainees. This controverts USAID's and the United States Congress' own excellent gender-and-development policies worldwide; it risks increasing or even creating gender inequities in access to natural resources. If women are excluded as natural resource stakeholders, they will have fewer incentives to become wise resource stewards. This is important in that women comprise at least half of Ecuador's primary resource users and managers. SUBIR staff recognizes this problem and points to the difficulty in recruiting women to work in the forests or travel to meetings

away from their families. Much of this difficulty is reported to be cultural. However, there may be certain women who can participate, or the Project may be modified to make it easier and more acceptable for women to participate. In its field land use activities the Project does include the active participation of women and women's groups, and there is recognition of the need to work with these women to improve their ability to manage natural resources.

Turning to impacts of the organizational development component, particularly for the extensive training and workshops, in the absence of a functioning management information system, there is no clear record of how many people of what age, ethnicity, locality, or type of organizational affiliation participated in which organizational development efforts, whether by activity/event or program area. USAID/ Ecuador reports that the Project has supplied it with global figures on training by sex, however. When queried about the existence of such data at least on paper, the present Organizational Development Coordinator indicated that, if such records were even kept, they would be found not in the central but in the regional SUBIR offices. But these offices, too, were reported to keep no such data. The reach of, potential impacts on, and support of organizational development activities to other Project components and thrusts are thus virtually impossible to quantify. This unfortunate state of affairs reduces evaluation of achievements and impacts—whether positive or negative—largely to the level of anecdote, extrapolation, and supposition.

However, for both local-level/second-level organizations and national-level nongovernmental organizations, the evaluation team was able to visit with officers and members of a number of these (consult Annex B, List of Persons Contacted), and thereby to form some impression of SUBIR impacts in organizational development for sustainable use of biological resources at this level.

Overall, the team found organizational development impacts among second-level organizations in the lower Cotacachi-Cayapas Ecological Reserve to be few or weak. This appeared to be due to a large number of factors both endogenous and exogenous to the Project: the reportedly poor quality of the initial field team; the short tenure of the new team that replaced it and the notable lack of any social science expertise on the current team. The present Regional Coordinator has many shortcomings—as both observed by and reported to the evaluation team. The current Coordinator (and his predecessor) had the tendency to initiate organizational development and other activities with organizations with little or no direct links to conservation management of protected areas. There is a dearth of strongly united preexisting local organizations in the area and a tendency to organize in the absence of any clear justification.

Examples of the latter disjunct between organizational development and other units include: the formation and organizational training of community craft groups without adequately investigating reliable market outlets and prices for the products created; in some instances, the delivery of courses on ecotourism to representatives of communities that have yet to see any significant number of tourists in their communities; and provision of training in second-level organization administration, practical accounting, etc. before a group even has any funds to administer!

A larger problem is that both organizational development and Improved Use of Land and Biological Resources in Buffer Zones activity efforts have been carried out in a widely dispersed

and fragmented number of locales, many of them far distant from the protected area in question and most of them not clearly linked—either in participants' minds or in Project planning—with the other SUBIR components. An exception to the foregoing remarks about the lower Cotacachi-Cayapas Ecological Reserve, however, is organizational development and other component work in Playa de Oro (see Box 3–2).

Box 1–3. Integrated activities to promote sustainable use in Playa de Oro

The Afro-Ecuadorian community of Playa de Oro represents an important model for the SUBIR Project. The SUBIR team from Borbón has established linkages to the 47 families in the community that will improve the use of biological resources as well as the standard of living of the community. In Playa de Oro the SUBIR team has initiated integrated activities to address environmental problems, working with and strengthening local organizations. The research component has provided biological and socioeconomic information necessary to begin small rodent production that will provide protein for the community and a food source for tourists. The community views the recently constructed building as a potential tourist attraction along with the old gold mines, the Reserve and the cultural displays of song and dance that characterize the zone. SUBIR further supports ecotourism through training courses and the construction of a communal house that will serve as a tourist hostel.

Economic development activities in and around the community include agricultural diversification and improved and sustainable forest management. A member of the community traveled to Quintana Roo, Mexico to learn about sustainable forestry and has promoted and elicited great interest among community members. Forestry is basically in the planning stages, but agricultural production is underway and includes successful production of rice, soybeans, and vegetables. A rotation of summer soybeans and peanuts is planned. Nurseries of cacao and leguminous tree species have been created and will be managed by the community.

These activities are further supported by parabiologists and paralegals who work in important biological research and inventories and on community rights to land and natural resources, respectively. These efforts are concentrated and have led to the greater recognition of the importance of managing the communities' biological resources in a more sustainable manner and to ward off incursions into the Reserve. Furthermore, the level of community organization and interest has grown and with it the desire to improve social and economic conditions.

The community has had no teacher for four years, has little transportation options and suffers poor health conditions. They are now seeking ways to address these problems and have hopes that SUBIR's current efforts can serve as a catalyst to attract support from other programs and Government of Ecuador institutions. The community now wants to send a delegation to Quito to demand a teacher. Playa de Oro is organized and ready to confront its problems and much of this community's progress can be attributed to SUBIR's efforts.

The evaluation team also found some organizational development “success stories” among SUBIR efforts with second-level organizations of the upper Cotacachi-Cayapas Ecological Reserve and Yasuní National Park buffer zones. Perhaps most notable is SUBIR's significant strengthening—in close conjunction with CARE's PROMUSTA Project (Proyecto Manejo de Uso Sostenible de las Tierras Andinas)—of ATAACU so that this organization can better protect and sustainably manage its buffer zone lands from threats both within and outside ATAACU's 10-member communities (see Box 3–3).

Box 1–4. ATAACU: A SUBIR success story

ATAACU embraces approximately 400 families of mestizo colonos who moved into the Cuellaje area in the 1930s to slash, burn, farm, and raise cattle and other livestock. As recounted to the evaluation team by the association's president (a woman), the community of Cuellaje first attempted to organize about 8 years ago around land titling issues, working directly with IERAC. But initially it met with only limited success in its titling efforts. When contact was made between ATAACU and SUBIR nearly two years ago, the association was impressed with SUBIR's bottom-up approach and its promise of assistance in empowering local people to take control over management of their own lands. This promise has since been fulfilled through SUBIR training of ATAACU paralegals. As part of its 25 percent match with SUBIR funds, ATAACU provides Project workers with an office.

With the land tenure situation better in hand, with a powerful collaboration between SUBIR's environmental vision and expertise, and PROMUSTA's longtime technical strength in agriculture in this ecozone (SUBIR pays the salaries of experienced PROMUSTA extensionists who reside within ATAACU communities), and with an emphasis on holistic land use management systems that include agroforestry, six ATAACU communities have also set up nurseries with approximately 20,000 seedlings of fruit, wood, and nitrogen-fixing tree species for conservation-and-development uses. In addition, ATAACU members are learning about composting, green manuring, earthworm culture, and other techniques for protecting and enriching their soils and increasing their farms' productivity—thereby decreasing their need to open up more forested lands for cropping.

With technical assistance from SUBIR, they are also exploring nearby national markets for their fruit-tree output plus international markets (specifically Green Tree) for new nontraditional products such as agave wallpaper. (Christian Dior is said possibly to be interested in the latter!) These

Another success in organizational development appears to be SUBIR work with FCUNAE, the 20-year-old, 30,000-member federation of Quichua peoples residing near Yasuní National Park. As in the ATAACU experience, it appears that “all the pieces” of SUBIR came together in FCUNAE: organizational development's land titling efforts backed by the Research and Monitoring activity's cadastral services through the Quito nongovernmental organization Ecociencia, plus organizational development training in institutional organization, administration, leadership, etc.; Improved Use of Land and Biological Resources in Buffer Zones activity work in sustainable uses of agricultural land and other resources; Ecotourism Development's institution of an ecotourism initiative (Chapter 5); and Protected Area Management activity's facilitating the signing of a cooperative agreement among FCUNAE, INEFAN, and ONHAE (Organización de la Nacionalidad Huaorani de la Amazonía Ecuatoriana) to facilitate their consultative administration of the park (Chapter 4). FCUNAE has also expressed interest in participating in the Protected Area Management activity's park guard program. Although prospects for the long-term financial sustainability of FCUNAE and is not yet clear, as one interviewee put it, the Quichua people of the area now stand ready “to serve as a human buffer” around the park. But one of the major aspects of this success story that struck the evaluation team was FCUNAE's now-strong organizational ability to make and implement its own institutional decisions.

Turning next to nongovernmental organizations (as vs. second-level organizations), as noted in Chapter 1, for a subsample of key nongovernmental organizations collaborating with SUBIR, the evaluation team developed and systematically administered a structured, open-ended questionnaire to directors and members of these organizations to elicit their assessment of SUBIR impacts on their respective nongovernmental organizations' institutional capacity. Interestingly, their response was uniformly positive on one point: that, by affording opportunities for field-level “praxis,” SUBIR had significantly strengthened their organizations. Others also felt that SUBIR had played a role—whether directly or indirectly—in their own and other environmental nongovernmental organizations' refining the definition of their institutional mandates and environmental action or advocacy niches. They also indicated that, with SUBIR lending its voice to their own and that of the umbrella nongovernmental organization CEDENMA, their overall powers of advocacy have been strengthened in general and, in particular, their credibility with and attention from Government of Ecuador agencies increased.[4]

For a mini-case study of nongovernmental organization strengthening—albeit not one carried out by Organizational Development—see Chapter 7 on Ecociencia.

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Nongovernmental organizations felt there were several ways in which SUBIR could do more to strengthen them, beyond the assistance listed in organizational development above.

- Training for nongovernmental organization technical teams and technical assistance in such areas as environmental assessment and monitoring.
- Training in participatory action research and rapid appraisal methodologies.
- Preparation and codification of research and technology-transfer tools for easy use by nongovernmental organizations and second-level organizations.
- Seminars and policy dialogue on intellectual property rights and biodiversity.

One nongovernmental organization interviewee also suggested that, in general, SUBIR needs to pay more attention to human ecology. “Right now,” he says, “it looks too much at the plants and animals, and sometimes forgets about the people.” Another interviewee pointed out that the level of local decision making and participation in some SUBIR activities should merit closer attention.

With regard to the SOW query on resentments over differential SUBIR funding to its various collaborating entities, the much-mooted-in-Quito topic of Chachi/Afro-Ecuadorian tensions in the lower Cotacachi-Cayapas Ecological Reserve was never once raised by local people in interviews by the evaluation subteam who visited that area. Although some intra-Chachi tensions over lumbering issues were noted, these did not seem to relate directly to SUBIR funding. Quichua-Huaorani tensions in Yasuní National Park; likewise for Huaorani-Shuar tensions in the Yasuní National Park.

Quito nongovernmental organizations did raise some questions about the “transparency” of SUBIR procedures and Project criteria for selecting partner nongovernmental organizations with whom to work on different initiatives. The evaluation team wondered about this, too, in that it sometimes seemed that SUBIR nongovernmental organization partners have been selected without adequate attention to their technical capacity to implement the job at hand (see Chapter 6) or to the proportional advantages and disadvantages (e.g., additional administrative oversight) they bring, versus direct implementation by SUBIR itself. Another puzzle for the evaluation team was the failure of the organizational development and other components to partner with expertise in private-enterprise organizations, most notably in ecotourism development (Chapter 5).

The team has also had the sense that nongovernmental organization training has been offered on a number of occasions without any firm rationale linking strengthening of particular nongovernmental organizations to accomplishment of SUBIR's larger mandate. (For a countercase, however, see Chapter 7.) Put another way, to what extent is strengthening of national-level nongovernmental organizations across the board a SUBIR priority—especially in view of reports that a number of other international donors such as the United Nations Development Program, the International Union for the Conservation of Nature, and even the Interamerican Development Bank are interested in assuming this task.

Finally, questions have been raised about the quality of post-diagnostic socioeconomic research carried or contracted out by the organizational development component to date and about how or if such research has keyed on or fed into the biological investigations of the

Research and Monitoring activity. Research on both the human and the biophysical ecology must go hand-in-hand if truly sustainable models for uses of biological resources are to be found. The formation and training of resource-user groups must be coordinated with both kinds of research: solid socioeconomic feasibility and marketing studies on the biological products proposed for users to extract or produce, raise, consume, and/or sell; and equally solid biophysical research on the sustainable harvesting, semi-domestication, or intensified use of the resources in question. It is doubtful whether asking second-level organizations to implement certain such kinds of socioeconomic research—as tentatively proposed for 1994—is realistic.

Regarding the efforts to implement the interinstitutional collaboration portion of the component, there have been a number of problems, from lack of clear initial definition of focus and responsibility, to internal organizational shifts at the SUBIR Quito office level, to misunderstanding of the Ecuadorian institutional context and what could realistically be achieved.

At present, most of the misunderstanding and problems that have plagued this component have been resolved in one form or another, mostly by default and abandonment of activities. The original conception of outreach and information has been effectively taken over by all other components that naturally carry out this function as a normal part of their operation.

Similarly, engagement with institutions has become a part of the operation each component works. The ill-fated regional Interorganizational Coordinating Committees have been formally abandoned by SUBIR, with regional office coordinators (and Quito coordinators, as appropriate) working institution by institution as is appropriate to the particular mix of activities in the region.

The idea of a formal citizens monitoring network has likewise been abandoned. Environmental education for the military, which took several years to get off the ground, is now operating effectively through one of the very competent nongovernmental organization contractors.

Two major developments have occurred regarding interinstitutional collaboration. First, this function has moved far beyond its original location within the organizational strengthening components as all components have taken on the function. Second, given the abandonment or accomplishment of the relatively few specific activities originally identified for the component, the need for a separate component is no longer justifiable.

Information dissemination, outreach to institutions, efforts at conflict resolution, all leading to development of appropriate solutions for sustainable resources management and development—this need of course will remain throughout the life of SUBIR. These actions need to be oriented to specific situations and problems. This is occurring, both at the regional and Quito level. In many ways, it is similar to much of the way in which policy analysis, development, and dialogue can be carried out. As such, inter institutional collaboration best fits together with the policy function an structure at the SUBIR Quito level.

6.8. Recommendations

- The Organizational Development and other components need to “focus and concentrate” their efforts on a selected number of second-level organizations in areas where a majority

of SUBIR components are operating. The work of the organizations should be evaluated and monitored to determine whether new efforts should be initiated or current activities continued. The organizations with whom SUBIR works need to be those that can best contribute to the overall objectives of the Project in the priority areas action.

- Workshops, seminars, or other forms of training under the Organizational Development component must be tightly linked to the accomplishment of specific SUBIR goals and activities. Training simply for the sake of training or for the promotion of the general good of Ecuador's environmental community is not a SUBIR mandate; in any case, many other international donors stand ready to fill this service role.
- Organizational Development needs to do a "reality check" on the extent to which organizations funded by SUBIR are truly allowed to participate in the selection, prioritization, and timing of types of training offered to each such organization to better relate to their perceived immediate needs and with the timing of implementation of other component activities. For example, organizational development and training for craft marketing should not be extended until it is determined that (a) markets exist and (b) this step coincides with the pace of other component activities, such as Research and Monitoring program studies of the sustainable harvesting of the biological resources upon which the craft initiative depends.
- The Organizational Development program in mass or formal environmental education should be dropped or, at the very least, contracted out to nongovernmental organizations with a greater comparative advantage in this arena. Any environmental education offered by Organizational Development itself should relate *directly* to the needs of other components in the field.
- The Organizational Development component (and SUBIR in general) needs to review its rationale and set policies for partnering with national-level nongovernmental organizations vis-à-vis site specific nongovernmental organizations' and the Project's mutual needs and interests. SUBIR should ask itself what are the pros and cons of handing-off what kinds of tasks to local nongovernmental organizations—e.g., SUBIR may gain more targeted expertise that it does not have in-house but it may lose in terms of increased in-house administrative and quality-control burdens and, far more important, in integrating nongovernmental organization activities and the resulting data and experience into the larger task of moving SUBIR closer to its prime mandate of "model building."
- Organizational Development *must* give more systematic attention to the inclusion of women as well as men in all of its programs.
- With the inclusion of female trainees, the para-legal program should be continued, accelerated, and intensified as appropriate to meet immediate Project and community needs—particularly for securing the resource tenure that facilitates both people's long-term investment in resource management systems, so as to help move forward testing of the sustainability of SUBIR models. In contrast to the general recommendation to focus and concentrate, the para-legal program should consider a relatively wide geographic scope of activities in the zones of influence of the three protected areas covered by the Project. The creation of a wide breadth of consciousness should ultimately benefit natural

resource management in the future and does not necessarily imply a greater commitment of SUBIR funds for Project activities.

- Similarly, Organizational Development should immediately begin to thoroughly document its experience in the cutting-edge program for paralegals. By the time the second cohort of such paraprofessionals has "graduated," this experience should be disseminated to the environment-and-development community both within and outside Ecuador.
- A minor point: to better represent what is in fact an improvement in programmatic integration, the paralegal and the legislative efforts could be folded together as two parts of a single organizational development program.
- All research—socioeconomic as well as biophysical—should be put under the research component, to ensure that the two kinds of data mutually inform each other. Results should be disseminated within and without Ecuador.
- As with training, socioeconomic research should relate directly to the accomplishment of specific SUBIR goals, activities, and information needs.
- For key socioeconomic research needs for which SUBIR does not have the in-house capacity (whether in terms of staff time or expertise), SUBIR should consider establishing a long-term and mutually beneficial relationship with a viable partner nongovernmental organization specialized in socioeconomic analysis, much in the way that Research and Monitoring has done with Ecociencia (see Chapter 7). Even better, SUBIR might seek to strengthen Ecociencia further by addition of a socioeconomics/human ecology unit within the institute.
- The time is at hand for Organizational Development (as well as all other components) to analyze both its "success stories" and failures so as to consolidate the different models of organizational development with which it is experimenting, and to begin to define larger principles of "what works or what doesn't" under which conditions—i.e., again, the SUBIR mandate of producing replicable models for the sustainable use of biological resources.
- Actions carried out in support of interinstitutional collaboration need to change from broad brush outreach and (semi)indiscriminate contact and information distribution to selected and targeted exchanges of ideas and information. They need to be undertaken primarily in support of existing Project activities in the planning or development stage. This is especially true for innovative or pilot projects that do not have a logical home in any other component, such as military environmental education.
- Interinstitutional collaboration efforts should be separated from the Organizational Development component whose purpose is much more oriented toward a mass of second-level organizations and nongovernmental organizations, rather than for individual unique efforts.
- Interinstitutional collaboration should not be confused with or considered as basic communication between SUBIR and relevant agencies that occurs on an ongoing and regular basis (for example, discussions with Fundación Natura about sharing and allocating park management support activities).

- Interinstitutional collaboration activities are closely related to policy dialogue and should be carried out by the same SUBIR staff and/or component that handles the policy function.

8. Protected Areas Management

8.2. Component Goal and Activities

According to the Project Paper, the goal of the Protected Areas Management Component is to conserve ecosystems of scientific and economic value for the benefit of buffer zone populations and the entire country.

Component activities:

- Provide infrastructure, equipment, and incentives necessary for reserve personnel to effectively carry out their management duties;
- Bolster training activities related to all facets of reserve management e.g., planning, administration, protection, extension, monitoring;
- Identify and mark reserve boundaries;
- Update and implement management plans;
- Reform national policies affecting protected areas; and
- Initiate complementary land use, research, and monitoring in protected area buffer zones.

8.4. Component Operation and Implementation

The scope of planning for this component includes both SUBIR's internal planning process as well as support for and assistance to INEFAN for reserve-specific and national level planning.

SUBIR's protected area plans are based on the results of the diagnostic studies that preceded Project implementation. Annual reports published in 1992 and 1993 track the progress of each proposed activity. These plans are presented to INEFAN for their input and approval.

Planned activities related to INEFAN include: extensive technical assistance by the Protected Areas Coordinator to INEFAN on a number of issues including the process of helping define national wildland and wildlife policy and restructuring the protected areas system. SUBIR staff also developed an “Emergency Plan for Yasuní National Park” and crafted an “Agreement for Cooperation” between INEFAN/ONHAE/FCUNAE to establish standards and procedures for Quichua and Hauorani land use and participation in the administration of Yasuní National Park. SUBIR has assisted reserve staff in developing short-term work plans and has recently initiated the process of evaluating and redrafting the management plans for Cotacachi-Cayapas Ecological Reserve and Cayambe-Coca Ecological Reserve.

Equally important in this component has been the ability to respond to issues as they arise. An important example is the Ecuadorian GEF project to strengthen the Ecuadorian Protected Areas system. The component coordinator has met extensively with the INEFAN GEF coordinator in order to know the whole GEF proposal and offer general recommendations. In particular he has worked to modify the section of the GEF dealing with forestry issues in the

Cotacachi-Cayapas Ecological Reserve. In addition to providing much factual information in order to correct lack of knowledge and misunderstandings, the coordinator has been able to expand the scope of the proposed work from simple inventory work to development of management plans that are sensitive to community issues and needs.

Until recently, each protected area had a SUBIR Quito based staff person who focused on that area. With the departure of one of those individuals, the two remaining staff have divided activities.

Phase I Protected Area activities have been closely tiered to Annual Operational Plans. Nearly all component activities were projected in these planning documents. Not all projected activities have been initiated and a number of them are behind schedule. In 1993 there were 46 proposed component activities. Twenty-two, almost 50 percent, were completed as planned. Thirteen accomplished less than half of the originally proposed activities while 11 were postponed or suspended. The provision of equipment, repairs, fuel, and subsistence payments for park guards, as well as in-service training and technical assistance to INEFAN at the national level, make up the bulk of activities on track as per annual operating plans. The marking of park boundaries and construction of guard stations, while underway, generally have not been completed as planned. The same holds true for proposed efforts to increase local understanding of the value of wildlands through field trips and other activities. Some of the postponed projects are directly dependent on the completion the INEFAN restructuring process (training courses for INEFAN staff whose job titles and functions have not yet been defined). Others relate to the extremely dynamic situation in Yasuní National Park (e.g., the Maxus road construction and indigenous land issues). And others reflect a need to cut back due to budget limitations..

Component activities in 1993 and 1994 closely resemble those proposed in the 1991 Project Paper. While some have been modified in response to changing field conditions (e.g., the drafting of an emergency plan for Yasuní National Park), specific activities remained largely unchanged throughout Phase 1.

At the time of writing, Phase I products have included:

- The construction of six guard posts.
- The provision of SUBIR supplied fuel, repairs, and transport, to INEFAN staff, which has increased their mobility.
- Subsistence payments to reserve staff that has provided an incentive for getting them out of the office and into the field and the communities.
- Training activities that have ranged from planning workshops to management and protection activities.
- Identifying and marking reserve borders.
- Drafting of an operational plan for the Aragón private reserve, an emergency management plan for Yasuní National Park and the resultant agreement between FCUNAE/ONHAE/INEFAN, which addresses shared land management issues in and around Yasuní National Park.
- Technical assistance to INEFAN at the national level on planning, management, and policy issues.

- Advising on the refinement and modification of the of the GEF project.
- Initiation of a “guardaparques communitarios program,” which will train and equip community volunteers to serve as park guards.
- In some communities, anecdotal evidence suggests increased respect and concern for protected natural areas, which may be reducing illegal hunting, timbering, and burning.

8.6. Evaluation Findings and Conclusions

Through the hard and skilled work of SUBIR staff, particularly the component coordinator, protected area activities are beginning to have a significant, though geographically specific, impact on the protection and management of natural areas. While it is too soon to quantify component impacts on the conservation of biological diversity, many of the prerequisites for achieving this goal are beginning to be addressed. While there have been problems in the planning and implementation of these initiatives, a foundation for Phase II protected area activities is being built.

The planning process for SUBIR's protected areas program has been participatory, but only on certain levels, and at times somewhat rigid. Component plans ranging from the original 1991 Project Paper to the proposed 1994 protected areas operational plan are strikingly similar. This seems to indicate that either the original Project plan remains completely relevant, or that staff have been reluctant to tinker with the Project design. The coordinator has been with SUBIR from the beginning and has immense experience in wildland management. His allegiance to initially proposed activities probably reflects both their general soundness and the coordinators personal investment in the Project.

Technically, these plans are well-conceived. They balance the need for immediate protection efforts (guard stations and motor boats) with activities that could have long-term payoffs (planning and policy reform).

Still, they were extremely ambitious in their geographic scope. It is not surprising that a number of activities have not been completed. Staff reluctance to change these plans, however, is. An unyielding vision can carry a Project over rough terrain. It can also obscure one's view of more expedient routes.

While considerable effort has been made to make the SUBIR planning process as inclusive as possible, some key stakeholders have not, or at least claim that they have not had this opportunity. For example, some INEFAN field staff told the evaluation team that they were not invited to participate in planning SUBIR activities related to their reserves. In their opinion, commenting on the final draft of the SUBIR operational plan did not equate with active participation in the process. In reality, these individuals were afforded this opportunity but choose not to participate. Nevertheless it is important that mechanisms be put into place that insure their involvement.

SUBIR has been defined and primarily implemented as a field project carrying out clearly defined activities. As seen above this holds for much of the protected areas management work. However work in this component has another and very different side to it. SUBIR's counterpart agency is INEFAN, the organization responsible for managing protected areas (and forestry).

INEFAN's responsibilities cover much more than the three protected areas SUBIR works with. INEFAN's director is interested in much more than on the ground help with guardaparques and training sessions. His needs include help with overall policy and management for the whole system, and he would welcome SUBIR assistance with this. The SUBIR Project must work with INEFAN, but often in a climate of uncertainty due in large part to INEFAN's restructuring. A serious added problem is that INEFAN has not named a national director for protected areas and wildlife, who would normally be the SUBIR counterpart contact for this component.

SUBIR's geographically specific mandate and its orientation toward action at the ground level limit the response possible to total INEFAN needs. However, steps have been taken to provide as much help as possible. They include 1) paying the salary for an Executive Aide to the INEFAN Director who serves as official SUBIR contact and liaison and 2) seconding the PAM coordinator to INEFAN on a half-time basis. As a result of the latter, the coordinators presence in INEFAN's offices has allowed him and SUBIR to engage in a number of worthwhile activities: providing day to day advice for matters as they come up; developing broad aspects of total protected area management policy; and effective coordination with the GEF project as it has developed. SUBIR has not been able, however to respond favorably to all of INEFAN's requests for assistance, particularly those relating to help in improving the administrative operation of the agency at the highest level.

In the nongovernmental sector, there has been close collaboration with some of the Quito nongovernmental organizations such as the Fundación Natura. But others in the nongovernmental organization community expressed a real or perceived lack of opportunity to participate in SUBIR's planning activities. At the second-level organization level SUBIR has participated with FCUNAE, ONHAE, ATAACU, and OINCE.

At the community level, the evaluation team saw some impressive evidence of local involvement in natural area planning and management. Indeed, in the town of Cuellaje near the Cotacachi-Cayapas Ecological Reserve where SUBIR has been active, local residents criticized INEFAN for *not* involving them more in reserve management. They also expressed considerable interest in participating in the “guardaparques communitarios” project. At another site near Laguna de Baños, Cayambe-Coca Ecological Reserve, local residents were building a guard station/ visitor shelter where they will assume a reserve vigilance role. Some second-level organization such as FCUNAE have also helped to develop natural area plans component plans (the Yasuní National Park emergency plan).

The immense geographic scope of these protected areas, coupled with logistical challenges present formidable barriers to carrying out these plans in a timely fashion. There are some very good reasons why the three reserves are still wild. Their remote locations and difficult terrain are perhaps their best protection, but also an obstacle to their effective management.

Another force that has slowed Project implementation has been the ever-changing sociopolitical and environmental dynamics of some of the Project sites. Disputes between resident indigenous populations and oil companies in Yasuní National Park, and between local residents and timber companies in Cotacachi-Cayapas Ecological Reserve have delayed some proposed activities. Finally, INEFAN has yet to develop the desired level of administrative efficiency and flexibility that it and others would like to see. Given all these factors, component

implementation has been relatively successful. This is particularly true for activities related to financial and logistical support for INEFAN staff (although some complained to the evaluation team about delays in receiving promised assistance).

Another key implementation problem is the shortage of reserve staff and their general lack of training. Staff at the Cotacachi-Cayapas Ecological Reserve are now 28 persons, reportedly to be reduced to 14 in the near future. The decrease in numbers suggests a reduction by 50 percent in their ability to protect the reserve. This decreased capability could be even greater given what is understood to be INEFAN's future staff utilization patterns (see following paragraph). A major problem hindering efforts to develop new reserve management plans is the lack of planning experience within INEFAN (most management plan development and writing is contracted out). Finally, reserve outreach to adjacent communities has been limited because of a dearth of extension and communication skills among reserve staff.

A perceived obstacle to the success of this SUBIR component—and a serious one if it turns out to be true—has been the drawn out restructuring of the Natural Areas and the Wildlife Department of INEFAN and the apparent low priority given to parks and reserves in the total INEFAN reorganization. Two reported elements of the reorganization are critical. First, the elimination of job titles and positions that are assigned exclusively to the operation of protected areas. (Almost all INEFAN would reportedly work at both protected areas management and forestry tasks.) Second, within the context of a restricted budget, the application of parks entrance fees to any and all activities carried out by INEFAN, not just protected areas management.

This suggests that much of the nearly three million dollars now generated as entrance and other fees at the Galapagos National Park would go to pay for the forestry side of INEFAN's activities.

If this reported situation is true, it would likely bode ill for the future of parks protection. Future SUBIR support must be based on clear presentation of the way in which SUBIR will be reorganized and what the effects will be on protected areas. Very shortly, outside funding for a number of guardaparques (provided through the Fundación Natura debt swap) will expire. Some of these guardaparques have been hired directly by INEFAN, but if they are expected to carry out many forestry tasks (reportedly 9 of the 12 tasks listed in their job description), the effect would be as severe as loosing them completely once debt-swap money ends. Job reclassification has also reportedly affected parks chiefs (jefes de área), with that function being rolled into a broader title, jefe técnico, with significant forestry functions).

The above considerations give rise to widespread belief that INEFAN lacks a real commitment to effective management of protected areas and that in fact the areas will not be protected in the very near future. The evaluation team fears for the future of the SUBIR Project if this apparent lack of commitment from INEFAN is in fact reality. Because biodiversity conservation is directly dependent on effective wildland protection and management, INEFAN must either commit to providing adequate funds for management and adequate staffing or else develop and implement alternative methods whereby appropriate management and protection is assured. Without it, the future of the SUBIR Project is in jeopardy. Buffer zone activities are extremely important, but without adequate protection and management of the core protected

areas, buffer zone activities alone will not achieve Project goals.

The lack of nongovernmental organization counterparts at the reserve sites has also reduced opportunities for Project implementation. There are some notable exceptions (ATAACU near Cotacachi-Cayapas Ecological Reserve, Fundación Rumicocha near Cayambe-Coca Ecological Reserve, and FCUNAI near Yasuní National Park) but in the lower Cotacachi-Cayapas Ecological Reserve, there are few if any organizations interested or capable of assisting in protected area management. SUBIR has helped to strengthen some of these, but more energy needs to be directed toward this critical strategy. The innovative "guardaparques communitarios" program, for example, will only succeed if effective counterpart nongovernmental organizations at the local level assist in their training and management.

On the ground implementation of protected area activities has not always been well-coordinated with other SUBIR components, all of which are critical to its success. Ecotourism activities are perhaps most closely integrated with protected areas, probably due to the fact that they have the same coordinator. Still, potential negative environmental impacts from tourism need to be closely monitored and adequately addressed. There has been some coordination with the Research component, which could play an important role in this monitoring, and in supplying important baseline information for management plans and programs. But application of this information is only just beginning. The Improved Land Use component is perhaps the least integrated into protected area activities. This could pose some very serious problems in the future if, for example, improved agricultural practices and markets inadvertently attract new colonists into wildland areas or if these approaches do not lead to promised economic benefits.

While a foundation for reserve planning and management is being put into place, this will be a long, difficult process. Component managers recognize that this process is, in a sense, as important as products, e.g., guard stations and management plans. While not always taking a participatory approach, they recognize that this is critical and, in contrast to most wildland management taking place in Ecuador, they are beginning to create much needed examples of community-based approaches to protecting wildlife and wildlands.

But the protection of the core of the ICDP projects—the protected areas—is essential to achieving the goals of the SUBIR Project.

The efforts of the protected areas component has improved the effectiveness of INEFAN's reserve management. But reserve staff and funding remains so small that the geographic impacts of these initiatives is limited. And if further INEFAN budget and staff cuts occur as expected, protection efforts will loose ground and the conservation of biological diversity will be in jeopardy.

8.8. Recommendations

- Though significant progress has been made, greater effort is needed to make component planning a more inclusive process, particularly with key stakeholders such as INEFAN field staff, national and local nongovernmental organizations, and residents of buffer zone areas.

- At the outset of the annual operational planning process, regional SUBIR coordinators could serve as planning liaisons with key local organizations and individuals to assess their concerns and ideas related to reserve management activities.
- Planning and decision making should become more adaptive in nature. Project activities should not be carried out solely on the basis of their past perceived importance or history. Any component activity should be subject to modification or even elimination if evaluation indicates.
- Building on the ongoing efforts of the component director, a new SUBIR Project focusing on the investigation and identification of alternative funding sources for protected areas should be initiated.
- A growing number of SUBIR-like wildland protection projects are being proposed in Ecuador (e.g., the OEA and GEF projects both of which were significantly influenced by the work of SUBIR staff). These could, if planned and carried out in a coordinated fashion, represent a tremendous opportunity to bolster SUBIR's efforts or allow the Project to spin off some of its existing activities and initiate new ones. SUBIR should continue to closely track these initiatives, and perhaps become a catalyst for joint planning, particularly with those whose geographic or ecological scope may overlap with SUBIR's.
- Support for reserve planning is a major SUBIR strategy. While the development of management plans is important, these long-term efforts should be complemented with more short-term and relatively simple operational plans for each reserve. SUBIR has wisely decided to initially focus on the development of straightforward operational plans. But these plans should address the buffer zone activities and directly relate them to proposed reserve management. Residents of these buffer zone areas need to be brought into the planning process.
- While progress is being made, second-level organizations near reserves must play a greater role in protected area component activities. This will, in some cases, require a significant institution building initiative on the part of SUBIR. Local nongovernmental organizations will be more effective in bringing communities into the reserve management process, in monitoring INEFAN management activities, and in supporting grassroots protection efforts.
- SUBIR should obtain documentation demonstrating an effective commitment from INEFAN for adequate management of protected areas, preferably for significantly increased support from the current level. If this cannot be provided, SUBIR, together with relevant local, national, and international nongovernmental organizations, should initiate efforts to work with INEFAN to develop an alternative strategy to the current management situation in parks and reserves. This process would identify options for co-management and funding of parks and reserves between nongovernmental organization, community, tribal, governmental, and international entities.
- SUBIR should examine the possibility of providing low cost but useful tools for assisting INEFAN to become more technically proficient in high-level administration, for example evaluating Project management software and providing training in the use of the

recommended application.

- SUBIR needs to promote a national policy dialogue on how to redirect funds generated by parks (primarily Galapagos) back into the park system.
- SUBIR's protected area component should explore the possibility of using global positioning equipment (already being used in the research and monitoring component) as a means of accelerating progress in marking park boundaries.
- The guardaparques communitarios program should be significantly expanded in Phase II. While these volunteers would not replace INEFAN staff, they could greatly bolster protection efforts and better integrate communities into wildland management. These individuals should be adequately supplied with field equipment and "Guardaparque Comunitario" shirts, hats, rain gear, and boots.

Box 1–5. Reserve management at the community level

In July of 1993, residents of the community of Cuellaje met with representatives of the neighboring Cotacachi-Cayapas Ecological Reserve to identify shared concerns about reserve management and natural resource problems. SUBIR had been actively working with both local residents (primarily through the second-level organization "ATAACU," which is made up of agricultural workers) and with INEFAN staff. Nine issues were initially identified and a shared strategy for resolving them was crafted. The fact that such a meeting occurred is somewhat remarkable. That there was a follow up gathering nine months later to evaluate progress is even more unusual.

The meeting in April of 1994 began cordially enough. Skillfully facilitated by the SUBIR protected area coordinator, issues of shared concern were reviewed and the positive actions that had been taken were identified. But it was obvious that there had been growing tensions between some of the individuals in ATAACU and INEFAN. After a lengthy list of positive actions was discussed, dialogue became more heated as problems were analyzed. Accusations between the two groups began to fly.

But unlike most community/park confrontations of this kind, many of the complaints reflected a desire for more and better communication and cooperation, rather than the standard "the park is taking away my resources" or "the community is destroying my park." In fact, many from the community were expressing a desire to play an active role in reserve protection. They were particularly interested in more involvement in the "guardaparques communitarios" project that SUBIR had initiated with the support of INEFAN. They also wanted more extension and education programs. INEFAN representatives complained that they were often left out of ATAACU events. They wanted to be more directly involved in the community affairs.

The debate continued for hours. But generally remained civil and constructive. The bottom line seems to be more of a clash of personalities than a difference of principles. It was agreed that there would be joint weekly planning meeting to hammer out these problems on a regular basis rather than letting them stew for months. It was also agreed that the guardaparque comunitario program would move forward. Not everyone left the meeting happy, but they did leave together. Dialogue had been established, work on the nine shared goals would continue.

Box 1–6. Creating partnerships between parks and indigenous people

Yasuní National Park has gained fame worldwide for both its ecological importance and the mounting threats to its well-being. It offers a microcosm of many of the problems facing both native peoples and wildland areas in the American humid tropics.

The Huaorani have, for centuries, occupied the deep forests of what is now considered to be Yasuní National Park. Other indigenous groups like the Shuar and the Quichuas have recently moved to this region, as have mestizo colonists. The discovery and extraction of oil has complicated this situation by several orders of magnitude. National and international press coverage has placed Yasuní under the microscope of the global environmental community.

At the request of INEFAN, SUBIR protected area staff initiated work on an emergency management plan for the area. Pulling together all of the principal players; native peoples, government officials, representatives of the extractive industries and others, SUBIR facilitated a strategic planning process that resulted in an "Emergency Plan for Yasuní National Park."

This plan was approved by INEFAN and served as the basis for an agreement between ONHAE (the national organization of the Huaorani), FCUNAE (the Federation of Natives of the Ecuadorian Amazon), and INEFAN. This agreement identified mechanisms for Huaorani and Quichua to participate in reserve management and it delineated the territories of each of these groups. ONHAE, FCUNAI, and INEFAN asked SUBIR to then draw up an agreement between these groups, which detailed the role that each would play in the management of the region. This was adopted by the government on behalf of the President of Ecuador on December 15, 1993.

The threats to both the indigenous residents and the native wildlife of Yasuní National Park have not been diminished. Oil companies expand their operations and clashes among native groups and between native groups and colonists have not been resolved. But the plan that SUBIR has crafted, and the follow up agreement that have been signed, provide some hope that these complex problems will find some resolution. At a critical moment when no other organizations were willing to enter this fray, SUBIR successfully offered its services. SUBIR skill and commitment will be needed again in the future as the complex set of forces and organizations in and around the Yasuní National Park shift and create new sets of concerns and problems to resolve.

Box 1–7. Organizational strengthening for the counterpart agency—more than just a shotgun marriage?

Organizational strengthening of SUBIR's Government of Ecuador counterpart agency, INEFAN, is a special case. It falls within the general component objective of strengthening public agencies to carry out sustainable resource use and protection, but INEFAN's size and broad mandate set it apart from most institutions helped through this component. With more than 700 employees, INEFAN manages all national parks and protected areas. It was created in late 1992, taking over forestry, parks, and wildlife functions and staff from the MAG's Subsecretary of Forestry and Parks. Intended to have broader powers and independence than its predecessor, INEFAN has been attempting to organize itself since its creation. Its predecessor was identified as the counterpart agency; this designation was inherited by INEFAN and its Executive Director when he took office with the new administration in 1992.

SUBIR has extended mainly three kinds of "strengthening" to INEFAN: training of staff, both formal and informal; funding or development of major products, such as parks management plans; and policy-related work. In 1992, the first implementation year, these efforts were relatively minor, with more effort being devoted to activities in and with the three protected areas. The training component was strengthened significantly by the hiring of a full-time SUBIR professional to work permanently and directly with parks personnel, allowing the project to move significantly beyond the one workshop given in 1992.

In 1993, the pace of institutional strengthening increased as direct field work became more routinized. Four major events stand out.

- SUBIR assisted INEFAN in preparing an emergency management plan for Yasuní National Park, which has experienced conflicts between ethic groups and major petroleum-industry incursions (permitted by the Ministry of Mines and Energy). A third parks professional was hired and the work culminated in the creation of an emergency plan and the signing of an agreement among the two ethnic groups and INEFAN. This agreement set the stage for further planning to establish a permanent management plan that would involve both ethnic groups in park management and protection.
- The SUBIR parks coordinator was seconded on a half-time basis to INEFAN.
- SUBIR is paying the salary of a liaison between the Project and INEFAN in the per-

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10. Ecotourism Development

10.2. Component Purpose and Activities

The goal of this component is to add new and alternative value to the biocultural diversity of protected areas in order to provide a continuous source of income to support wildland management and generate employment for local people.

Component Activities:

- Inventory tourism attractions.
- Provide ecotourism orientation to communities.
- Establish information/interpretive centers in three communities.
- Establish nature and interpretive trails in three areas.
- Provide ecotourism management training opportunities.
- Coordinate with private ecotourism operators.
- Evaluate the impacts of ecotourism operations.

10.4. Component Operations, Purpose, and Implementation

Ecotourism development plans are geared to the original Project Paper and the diagnostic studies. Together these include component goals, strategies, guiding principles, and general component activities. The 1992 and 1993 Annual Reports track the progress of proposed activities.

The component coordinator also directs the Project's Protected Area Component. Annual work plans are developed with input from a number of tourism consultants who, under contract from SUBIR, have completed surveys of tourist attractions at four different sites. SUBIR staff at the regional level play varying roles in ecotourism planning and decision making, depending upon the site and Project. In Añango, for example, most of the ecotourism activities are coordinated by a Peace Corps Volunteer working in the SUBIR Coca office with little technical backstopping from the central office. In contrast, SUBIR central office staff have been primarily responsible for the development of the Coca visitors' center and the Sinangue facilities in the Cayambe-Coca Ecological Reserve.

At the local level, planning for fledgling ecotourism efforts have included community residents (as in the case of Añango), civic officials (in the development of the Coca visitors center), second-level organizations (the Fundación Rumicocha in Papallacta), private landowners (the manager of Finca Aragón), and private tour operators (Supernova).

Two proposed activities have not been significantly addressed: 1) coordination with private tourism operators and 2) impact assessment of tourism. In 1993, the SUBIR Operational Plan proposed 23 Ecotourism component activities. Of the proposed activities, 8 were completed as planned, 6 accomplished less than 50 percent of their target, and 9 were cancelled or postponed.

Most of the completed activities are related to tourism attraction inventories and follow-up community workshops. Projects not completed included: establishment of interpretive centers in Borbón, Baeza, and Coca, and construction of nature and interpretive trails at a number of sites. Most of the proposed or cancelled activities relate to training and actual implementation of ecotourism activities.

At the time of writing, Phase 1 Ecotourism Development activities had produced the following products:

- Publication of inventories of tourism attractions in Sinangue/Cayambe-Coca Ecological Reserve, Añango/Yasuní National Park, San Miguel/Cotacachi-Cayapas Ecological Reserve and Playa de Oro/Cotacachi-Cayapas Ecological Reserve. These include data on natural and cultural resources, tourism attractions, and a preliminary analysis of community interests in tourism.
- Publication of a tourist attraction inventory methodology.
- Community workshops in these four sites that addressed: Results of these inventories, the potential benefits and problems associated with the development of these sites, an analysis of the economic costs and benefits, determination of community tourism goals, and the role the community would play in ecotourism development.
- Archeological surveys at a number of sites proposed for tourism facilities.
- Construction of visitor facilities in Papallacta (wood frame rustic house), and Sinangue (traditional design with modern conveniences). SUBIR supplied building materials while local residents built the structures.
- Financing for materials for an interpretive center in Coca (50 percent complete).
- Initial work on nature trails in Cayambe-Coca Ecological Reserve and Cotacachi-Cayapas Ecological Reserve.
- Training field trip to the Sabalo tourism development with representatives from Sinangue, Añango, San Miguel, Papallacta, and FCUNAE.
- Initial tourism management training in Añango and Sinangue.

10.6. Evaluation Findings and Conclusions

Ecotourism can indeed make a significant contribution to efforts to protect wildlands and build sustainable economies. But this will only occur if these activities are carefully integrated into more comprehensive resource management and development initiatives. The SUBIR Project represents a unique opportunity to do just that. It is making a serious attempt to embrace the principles of ecotourism and take a bottom-up approach to planning and developing these sites. But while SUBIR's involvement in promoting ecotourism makes good sense, their exact role and the manner in which ecotourism projects are planned, developed, and managed will determine whether and to what degree they actually achieve these goals. Outstanding natural features alone will not guarantee success.

Most of the planning for ecotourism activities was based on the diagnostic studies,

inventories of tourism features, and the knowledge and experience of the component director and consultants. For the most part, these plans did not spring from local residents or second-level organizations, but were presented to them as a development option and communities decided whether and how to participate. Nowhere did it appear that ecotourism activities were being developed against the general will of the communities. In fact, in some places unrealistic expectations were noted by the evaluation team. The ecotourism component is based on the following principles according to the SUBIR coordinator: ecotourism is important for the conservation of natural scenic beauty and biological diversity; ecotourism provides economic benefits for many and an economic justification for protected areas; ecotourism is the only way to guarantee a constant source of funds for the management of protected areas; ecotourism promotion requires the direct participation of local communities; and ecotourism requires processes that involve site promotion and education for local communities.

Only now are some communities getting to the point where tourism plans are actually being put into place. This is due to the time it has taken to complete inventories and follow-up workshops, organize communities, develop facilities, and contract consultant services. Though tourists facilities are being constructed, the community level planning and training necessary to achieve ecotourism goals may still be needed. Only in Añango, where tourists are already arriving as a direct result of SUBIR efforts, does the community seem to be somewhat prepared.

While the natural and cultural attractions of these areas is undeniable, other factors such as accessibility, weather, and logistical problems may throw up barriers to successful tourism programs. This is especially true if the target clientele is at least a cut above backpackers.

Market research could help to determine potential numbers and types of tourists, and also identify their needs and willingness to pay. For the most part this research is lacking. Current ecotourism component philosophy seems to be “if you build it, they will come.” This may be true, but just who “they” are, how many of them will show up, and what they will need to be happy is still more intuitive than quantified. With so many community hopes, aspiration, and hard work riding on these projects, it is essential that promised benefits come to fruition. If not, the implications for future conservation and development efforts could be serious.

The pressing need to offer wildland residents viable economic alternatives to destructive land use is often cited as the primary reason for moving these projects forward without thorough environmental or social impact assessments. In the context of economic reality, extensive, time consuming studies are probably inappropriate. And, the monitoring of impacts is planned as part of the tourism facility development process. But again, assessments done before projects are initiated can only improve their chances for success. Considering that some of these sites are within protected areas and/or isolated, indigenous communities, assessments of both natural and cultural impacts seems warranted. While the inventories of tourism attractions did touch upon both potential impacts and mitigation measures, this was done in a very cursory fashion.

Local participation in the planning and implementation of these projects has varied and has resulted even though none of the communities in question has received any formal training from SUBIR. Formal training in ecotourism was scheduled for 1994. In the case of Añango, the community has been actively involved in planning, debating, and modifying the Project. In Sinague, the community has built an impressive tourist facility (with SUBIR funding), but the

Project appears to have taken more of a top down, Quito directed approach. Residents of Papallacta, through the Fundación Rumicocha, gather on the weekends for “mingas” to work on a visitor shelter/guard station that they are constructing within Cayambe-Coca Ecological Reserve. While their long-range vision for its use and management are not readily apparent, they are genuinely enthusiastic about the Project and its potential benefits to the community and the reserve.

Ecotourism activities are beginning (it appears) to have a positive impact on community perceptions of the environment and the reserves. While this is in some cases more talk than action, individuals involved in these projects commented on “the importance of protecting wildlife and wildland.” Community members at three sites are trying to stop hunting in areas surrounding tourism development and some are serving as “guardaparques communitarios.” At one site, a privately owned farm, the owner has abandoned plans to clear forests for pasture and, following SUBIR recommendations, is protecting the entire area in hopes of attracting ecotourists. But not all community members share these views. Hunting and the cutting of trees within protected areas, even by those involved in ecotourism, is still occurring.

There is some indication that ecotourism programs are also beginning to conserve cultural resources. In Sinague, a Cofán community, evidence exists that traditional dress, knowledge of medicinal plants, and the wisdom of community elders is being preserved at least in part in anticipation of ecotourism activities. The same phenomenon is beginning to occur in Papallacta. The level, extent, and type of community participation varies according to socio-economic characteristics of the particular community.

SUBIR has been assisted in its ecotourism efforts by some nongovernmental organizations (CCD, CDC, INSTUR) and second-level organizations (FCUNAE, Fundación Rumicocha). A few private tourism companies (Supernova, Metropolitan Tours) have also been involved. Assistance from these tour operators is critical since this project is as much a business venture as it is a conservation initiative.

The number of tour operators (many claiming to be oriented toward ecotourism) in Ecuador is striking. Several are active in the same region as SUBIR's ecotourism projects, particularly in the Coca area. This poses both opportunities and problems. Opportunities relate to the markets that these operations have already created through their promotional efforts, the infrastructure they have put into place, and the expertise they have gained through years of experience. Problems relate to the competition they may pose to SUBIR supported activities. In a finite market, this could limit growth. And, most do not take a community based approach tourism. Already, some communities where SUBIR has been working (Añango for instance), have clashed with outside tour operators. This has caused some ill-feelings toward the tourism industry. Improved communication between these communities and tour businesses is needed. Though detailed in SUBIR's Strategic plan, this activity has been scarcely developed.

This element of SUBIR's program seems to be fairly well coordinated with the most relevant Government of Ecuador agency, INEFAN. But it appears that they could be improved with CETUR, the government's tourism corporation. While CETUR collaborated with SUBIR in the past, communication has been almost nonexistent in the past year.

The integration of ecotourism activities with the rest of SUBIR varies from component to

component. Because they are closely associated and have the same component coordinator, protected areas and ecotourism are nearly one and the same. The assumption is that one necessarily follows the other.

The research and monitoring component could supply much of the information needed for interpretive programs and impact assessments. But this has not always been the case. In one community, residents resisted efforts to permit SUBIR research activities thinking that they could only participate in one SUBIR program at a time.

There appears to be little coordination between the land use component and ecotourism. In the SUBIR evaluation workshop in December, the recommendation was made that SUBIR not promote forestry activities in Playa de Oro where the Project is already supporting ecotourism development. However, potential economic returns on timber harvest, while not necessarily sustainable, are certainly higher than the return on tourism and this needs to be recognized and addressed. Agricultural extension activities in this component could play an important role in tourism programs by increasing the quality and quantity of foods available in isolated communities. Innovative agricultural or forestry practices could also become another interpretive feature. The Organizational Development component could help to build nongovernmental organization and second-level organization capacity to manage these programs.

While ecotourism activities have yet to fulfill their promise, they are beginning to assist in achieving development and conservation goals. Though not always meeting SUBIR's own criteria for planning and implementation, this component has worked hard to embrace the elements of ecotourism. And for all the talk about this emerging development option, this is extremely rare in tourism business, even among so called ecotourism projects.

These efforts have created considerable community expectations, and this has translated into tangible progress in the development of tourism infrastructure and some changes in environmental attitudes. But to a certain degree, the cart has been put before the horse. The lack of market surveys, business plans, impact assessments, tourism management training and mechanisms for administering these programs at the community level needs to be addressed.

Ecuador has tremendous ecotourism potential. SUBIR staff may be correct in their assessment of the tourism attractions of these sites. But this does not necessarily mean that tourists will come, local economies will be boosted, and wildlife protected. Achieving these goals requires of actions SUBIR staff are aware of, but have not adequately addressed. This is not surprising considering the vast scope of SUBIR activities, the isolated nature of the sites, and the shortage of personnel and nongovernmental organizations and second-level organizations involved in tourism. The most oft-cited reason, however, is the desire to demonstrate the financial rewards of protecting nature. While a pragmatic approach, without precautions, it could limit the overall benefits of ecotourism to both humans and wildlife.

10.8. Recommendations

- Ecotourism market surveys and visitor use characteristic studies should be initiated immediately.
- In Phase II, development elements of the ecotourism component should be folded into

protected areas component, the monitoring aspects of ecotourism moved to the Research and Monitoring program, and the marketing elements into a new SUBIR component that deals specifically with the marketing aspects of all SUBIR resource use activities.

- Some ecotourism activities that have been slow starters (nature trails, Baeza visitor center, Borbón visitor center) should be reassessed regarding their benefits and potential and long-term viability, put on hold or passed off to other nongovernmental organizations or second-level organizations.
- A major component initiative should be the creation of a liaison between SUBIR and Ecuador's existing tourism industry and government tourism initiatives. In Phase II, a primary ecotourism focus should be fostering “ecotourism approaches” that embrace SUBIR's tourism development principles, by these already existing companies and governmental agencies.
- Increased effort should be made to help communities in SUBIR Project sites to link up with existing ecotourism operations for training and organizational assistance. SUBIR could play the role of broker in helping communities to effectively negotiate contracts with operators. SUBIR will need to ensure that such efforts go hand-in-hand with a program that educates communities sufficiently so they can negotiate and reach agreements with tourism operators that best responds to their interests.
- SUBIR, with other institutions such as CETUR and nongovernmental organizations such as the Ecotourism Society, should initiate a national dialogue on the role of tourism in protecting and financially supporting protected areas.
- second-level organizations could and should play an important role in local ecotourism projects. SUBIR's organizational development component should work closer with the ecotourism component in building this capacity among second-level organizations.
- INEFAN, particularly protected area staff, needs to be brought into all ecotourism projects that are within parks and reserves.
- Ecotourism projects with infrastructure already in place should not be stopped for the lack of EAs, but ecotourism and research and monitoring component staff should plan and implement impact monitoring programs before significant tourism activity occurs at these sites.
- Thought should be given to linking SUBIR-supported ecotourism sites together and with other existing sites to create “ecologically friendly” tourism circuits that could be promoted to the emerging “green” tourism markets.

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Box 1–8. "Añango, ecotourism from the bottom up"

Perched on the edge of the Napo River and actually within Yasuní National Park, the Quichua village of Añango survives mostly on small-scale agriculture, hunting, and fishing. Many community members have been forced to find work in Coca (two hours upriver) or with the oil companies or tourism operations that have moved into the province.

During the diagnostic phase of the SUBIR project, Añango and the nearby Lake Anangococha were identified as potential sites for ecotourism development. The lake was already being visited by tourists from a nearby jungle lodge. Local residents however, were not deriving any benefit and there was growing resentment toward these uninvited guests. The community had built a rustic visitor facility ten years ago, but the structure is in serious need of repair, or possibly reconstruction, and would not be attractive to certain types of tourists. In addition, the community felt frustration with the lack efforts by outside organizations and decided, in coordination with the PCV in the community, to launch a community effort to promote ecotourism.

Spearheaded by a US Peace Corps volunteer working with SUBIR, and with logistical support from INEFAN, an initial ecotourism program was established. First, some minor improvements were made to the rustic shelter built at the edge of the lake (a one-and-a-half hour jungle walk from the community of Añango). Needed services were assigned to various community members and a plan was put into place for managing ecotourism profits. One community member with experience in tourism, became the project manager.

Box 1–9. Finca Aragon: Protecting resources as a development option

The owner of the 2,000 hectare Finca Aragón didn't originally intend on creating a nature reserve. It just sort of happened—that is, with a little help from SUBIR.

The finca's owner had originally intended on cutting much of the wet, high elevation cloud forest to create pasture for several hundred head of cattle. Some forest was logged, and cows were introduced. Pastures became a quagmire and it became obvious that this place wasn't made for large, domestic ungulates.

But it was made for wildlife. A number of rare species such as spectacled bear and tapir roam the property. Hundreds of birds find suitable habitat in the primary cloud forest. Trout fill the streams. And while the ranch was is not large, it does represent one of the few wildland corridors connecting the newly created Antisana Reserve with Cayambe-Coca Ecological Reserve. When the owner of the place invited SUBIR to assist in writing a management plan for the property, the decision was easy.

Staff of SUBIR's wildlands and ecotourism component organized the planning team. The resultant document offered a number of management options, but emphasized the fragility of the ecosystem and noted its potential for ecotourism. The owner, intrigued with the idea, halted all forest cutting and begin to develop the site for scientists and ecotourism. SUBIR sponsored a workshop on ecotourism development at the site and this further reinforced the landowners commitment to conservation.

Ecociencia scientists working at the reserve carry out important research. One is looking at the impact of forest cutting on cloud forest bird species. Another innovative study focuses on the use of barbasco, (a poison commonly used to stun fish) and its impact on aquatic ecosystems.

Modest but comfortable housing is being constructed. But large crowds of tourists are not expected soon, nor even desired. The owner hopes to put into place a modest ecotourism operation that will help to recoup the costs of infrastructure development and the opportunity costs of protecting the forest. While such a development may be beyond the means of most landowners in this part of Ecuador, the bottom line is that biodiversity is being protected, and the prospect of ecotourism was one reason that this forest was spared.

12. Improved Use of Land and Biological Resources in Buffer Zones

12.2. Component Purpose and Activities

The goal of this component is to increase the productivity and sustainability of natural resource use in the zones of influence of protected areas through the creation of ecologically and economically sustainable resource management systems. The assumption is that these systems will reduce the agricultural and resource extraction pressures on protected areas and help preserve the country's biological diversity. The implication is that in their absence biological diversity will be severely threatened.

This component is divided into four interrelated programs: community forestry management; intensification and diversification of land use; pilot projects in the collection, processing, and commercialization of biological resources; and the strengthening of technical high schools. Each of these subprograms maintains a series of coordinated activities.

12.2.2. Community forestry management program

- Development of forest inventories and management and use plans.
- Creation of centers of wood collection and processing
- Development of small scale saw mills
- Implementation of a forest products marketing study and training in aspects of marketing
- Recruiting and training local extensionists

12.2.4. Intensification and diversification of land use program

- Creation of demonstration plots for agroforestry and integrated farm management to provide training and extension.
- Creation of nutritional vegetable gardens.
- Demonstrations and training in the raising of micro-livestock.
- Creation of nurseries for fruit trees, cacao, and other trees species appropriate to agroforestry interventions.
- Recruitment and training of extensionists.
- Creation of demonstration plots to provide technical assistance and training in soil and water conservation, and improved farm management.
- Establishment of demonstration areas for sylvopastoral research and training.

12.2.6. Pilot projects in the collection, processing, and marketing of biological resources program

- Analysis of Chachi artisanal operations and marketing studies for these products.
- Establishment of demonstration centers and training in artisanal techniques.
- Creation of collection centers for artisanal products.
- Feasibility studies for processing and marketing of agricultural and artisanal products.
- Creation of a production center for tagua products.
- Studies of other agricultural products with potential for processing and marketing.
- Establishment of collection centers for agricultural commodities.

12.2.8. Strengthening technical high schools program

- Implement programs to provide appropriate technologies and to form extensionists to work in the project zones.

12.4. Component Operation and Implementation

This component has diverged significantly from the goals established in the 1992 and 1993 work plans. According to a December 1993 workshop analyzing SUBIR activities, the number of activities programmed under this component was cut from 97 to 46, a reduction of close to 60 percent. Much of this reduction represents training courses and seminars contemplated under all component activities and is reflected in the draft 1994 work plan. This plan takes into account the concern of the SUBIR staff that the component was trying to undertake too many activities in too many places without adequate staff and technical capability. This concern is shared by the evaluation team.

The implementation of this component has suffered from several problems including turnover in key staff positions, both in Quito and in the field offices, inadequate technical and managerial staff capacity, and conflicts and indecision between the Consortium Executive Committee and SUBIR Project staff regarding forest management activities. Rough calculations from SUBIR reports indicate that the component has achieved approximately 28 percent of the total activities programmed, with the highest level of achievements in intensification and diversification of land use. Even though the Project shows relative success in this program, questions arise as to the appropriateness of some of the interventions with respect to the greater goals of preserving biological diversity and promoting sustainable use of resources in Ecuador.

Improved land use and the creation of economic development activities in the areas of influence of the protected areas in question may represent key interventions in the process of protecting biological diversity. While the premise that improved economic opportunities will necessarily lead to greater protection of biological diversity requires greater study, the lack of economic opportunities certainly appears to increase the pressure on natural resources and protected areas. It is therefore important to promote improved land use and economic opportunities, and create links between improved economic opportunities and the protection of

biological diversity in order to stimulate peoples' commitment to the protection and sustainable use of natural resources.

12.4.2. Community forest management program

At the time of this writing little has been accomplished in community forest management. SUBIR published a guide on methodologies for community based forest inventories and arranged, with help from GTZ, for community leaders from Cotacachi-Cayapas Ecological Reserve to visit a community forest management site in Quintana Roo, Mexico. This visit was well received by the local populations and appears to have contributed to awareness within Cotacachi-Cayapas Ecological Reserve associated communities and to greater Chachi demands in their negotiations regarding logging agreements with the firm Endesa/Botrosa. Industry leaders also participated in the SUBIR organized trip using their own funds to send a representative. The trip made a positive impression on the firm and has led to its interest in replicating the experience in Ecuador. A video prepared by Tropical Research and Development on promising approaches to natural forest management in Quintana Roo and elsewhere has been provide to SUBIR.

Initial efforts to carry out a forest inventory have begun in Playa de Oro and community leaders expressed their interest in moving ahead. The community forestry committee showed the evaluation team a map outlining the various forested areas to be managed by the community, including production zones and areas designated for protection. The community appeared to have a good sense of the importance of forest protection and management. The community also benefitted from the technical support of two foresters Loja working through the SOATRA program.

The 1994 work plan calls for the development of a pilot forest management plan for this community during the remainder of Phase I. However, the internal December evaluation workshop indicates a desire to eliminate forestry from Playa de Oro as a inconsistent with ecotourism plans. This recommendation appears short-sighted. The potential economic benefits from logging are currently much higher than for ecotourism and the community is looking for improved economic opportunities. Ecotourism represents an uncertain source of future income while forest products are tangible assets. If ecotourism develops into a money-making operation some day, sustainable forest management may be an important attraction.

Although forest management activities with the Chachis have been considered since the inception of the Project, conflict in the region with lumber interests has militated against initiation of a project with this group. The Consortium Executive Committee ruled against any coordination with Endesa/Botrosa and this had led to lost opportunities to influence logging policy in the zone. SUBIR involvement with the World Bank and GEF negotiations has been positive and offers promise for future collaboration among interested actors in the region.

12.4.4. Intensification and diversification of land use program

Activities in this program focus on improving agricultural and agroforestry practices to improve incomes as well as nutrition. Phase I activities have been undertaken in the Borbón area

of Cotacachi-Cayapas Ecological Reserve and include direct implementation by the SUBIR office and support to FUNDEAL for agricultural activities in a Chachi center on the Cayapas River. The current SUBIR-Borbón staff has only been working since September 1993 so agricultural efforts are still limited. Production includes rice, maize, peanuts, soybeans, yuca, and vegetables in rotation and in association depending on the crops and time of year. In the SUBIR has created a nursery for cacao and leguminous species to begin agroforestry work.

Successful agricultural activity occurs in the upper Cotacachi-Cayapas Ecological Reserve around Cuellaje where SUBIR works with CARE's PROMUSTA Project and ATAACU (Box 3–3). These activities include introduction of nurseries, the development of agroforestry extension activities and emphasis on holistic land use management systems.

Agricultural activities in Cayambe-Coca Ecological Reserve include agroforestry, the establishment of nutritional gardens, guinea pig production, and improved sylvopastoral practices. In this region SUBIR has attained many of its established 1993 work plan goals. Agroforestry studies and the creation of demonstration plots represent achievements in the Yasuní National Park, while some progress has been made in vegetable gardens. SUBIR has not yet supported any activities in marketing, except for activities under PROMUSTA. For the remainder of Phase I SUBIR proposes to focus on agroforestry, integrated farm management, and improved sylvopastoral practices.

12.4.6. Pilot projects in the collection, processing, and marketing of biological resources program

This program has been poorly developed to date, except for some initial attempts to form a center for the collection of Chachi artisanal products and support for production of tagua crafts. The 1994 work plan calls for the completion of three marketing studies in the Cotacachi-Cayapas Ecological Reserve (one for wood products and two for crafts) and for support to an artisanal school in Borbón. Activities in this subcomponent will be limited during the remainder of Phase I.

12.4.8. Strengthening of technical high schools program

No progress has been made to date in this program. The Directors of the various schools have made requests to SUBIR for support and some have expressed frustration at delays in receiving SUBIR funds. Support envisioned until the end of Phase I includes support for four schools with demonstration modules and training of students as agroforestry extensionists.

12.6. Evaluation Findings and Conclusions

12.6.2. Community Forestry Management Program

Progress in this program has been disappointing, especially given the pressures on forest resources in the area around the Cayapas, Onzole, and Santiago Rivers. Logging represents the

main source of income for people along these rivers who float their logs downriver to Borbón for sale. Both Chachis and Afro-Ecuadorians exploit lumber from primary forests. Since March of 1992 the logging company Endesa/Botrosa has attempted to reach an agreement with FECCHE and four Chachi centers for logging rights for sustainable harvest on Chachi land. The evaluation team heard that three of the Chachi Centers signed a ninth version of an agreement between the Chachi and ENDESA in mid-April. A copy of this version was not reviewed.

In meetings with the President of the Chachi Center of El Encanto, the evaluation team learned of the expectation that SUBIR would provide support for inventories and forest management. The president explained that since the community did not sign the agreement with Endesa it deserved support from SUBIR for forest management. SUBIR promised to visit the Center to present information on forest management in Quintana Roo. The Chachi president gave the impression of an ultimatum: provide us with technical assistance or we will sign with the lumber company. Unfortunately the situation in the area is confusing, with Chachi centers signing agreements then back-tracking on presumed commitments with Endesa. One apparent truth is that FECCHE is more committed to the agreement with Endesa/Botrosa than individual community members as indicated by the number of draft agreements between the two parties.

SUBIR had the opportunity to play a broker role between the Chachis and Endesa/Botrosa to insure that the agreement between the two parties was fair. However, the Consortium Executive Committee issued a policy statement against working with logging interests. The Consortium Executive Committee appeared to be concerned that support for logging interests would be detrimental to Chachi communities' interests and feared funding activities in the region that might benefit the logging companies at the expense of local communities. The Consortium Executive Committee then placed a hold on forestry activities, and especially on activities related to the Chachi and Endesa/Botrosa, pending the issuance of a logging policy. Unfortunately the Consortium Executive Committee took approximately six months to develop internal guidelines on logging and forestry, bringing to a halt all forestry efforts and limiting SUBIR's scope of action. Although direct economic assistance from SUBIR to the Chachis for management plans or other activities that directly support the logging interest would be an unwise use of SUBIR funds, the decision to avoid taking a role in the debate in support of Chachi interests was short-sighted on the part of the Consortium Executive Committee.

In spite of the impasse, both SUBIR and USAID/Ecuador have made important strides in addressing the forestry issue. Their efforts helped to convince the World Bank to hold a meeting in Ecuador that led to the reprogramming of GEF funds that had been cut due to issues related to ECOFOREST 2000. A new GEF agreement will be forthcoming to support approaches to sustainable forestry in the region. Another achievement is the involvement of Fundación Natura in the negotiation process between the Chachi and Endesa/Botrosa as an advocate for the Chachis. CEDENMA has also lent support to the initiative owing to discussions with USAID/Ecuador and SUBIR.

Turnover in the Quito as well as the office in Borbón represents another reason for the slow implementation progress. The current forester in Borbón was only hired in September, 1993 and has had only a few months to promote activities. Some forest inventory work has progressed in Playa de Oro and the community awaits development of a full-fledged inventory and

management plan. Activities in Playa de Oro are less controversial than in the above mentioned Chachi centers at this time since the logging pressure on these communities is less. Also, the Afro-Ecuadorians in the zone are still in the process of obtaining legal title to their land and, without title, relationships between logging interests and these communities could be problematic from a legal standpoint. From a programmatic view direct SUBIR forestry efforts to harvest both secondary and primary timber in Playa de Oro and areas not affected by negotiation with the logging company others promise for success, especially where these forestry activities are integrated with other component activities.

In the Cotacachi-Cayapas Ecological Reserve forestry represents a major economic opportunity for the communities. Anecdotal evidence from both El Encanto and Playa de Oro indicates people's understanding of the importance of protecting the Reserve as well as managing their resources for the good of the individuals in the community. The ENDESA-BOTROSA agreement with the Chachis remains controversial in many Chachi communities. People living in communities that signed the agreement told the evaluation team that nearly 50 percent of community members did not support the agreement; people do not trust the logging company. This assessment is borne out by reports that several Chachi communities along the Onzole River have requested SUBIR assistance to develop management plans independent of the logging company. This approach is positive and offers SUBIR an important brokering role to insure fairness in the agreements between the Chachi and the logging companies.

Inaction in forestry management on the part of SUBIR would lead to a serious loss of credibility and loss of an important opportunity to have a major economic and conservation impact in the zone. An opportunity to create models for sustainable use of forest products in the region exists. However, it is important for SUBIR to undertake one or two interventions and do them well. A major role for SUBIR will be to provide communities with knowledge of the value of their forest resources, both primary and secondary options for marketing. Armed with better knowledge and information the communities will determine how and to whom they wish to sell. SUBIR's role will be to level the playing field so that wood rich communities are not exploited by more powerful logging interests, and possibly serve as an intermediary or broker between the logging interests and those communities with sustainable management plans that wish to sell their wood to companies.

12.8. Recommendations

- SUBIR should immediately initiate one pilot forest management project with the Afro-Ecuadorian community of Playa de Oro where the ground work is already laid. This intervention should be a priority for the end of Phase I and continue into Phase II. SUBIR should also explore contacts with one Chachi community located near the Reserve, in the area around San Miguel, for example, to initiate a forest management project. This two-site recommendation stems from a perceived need to balance interventions between Chachi and Afro-Ecuadorian communities, and to respond to the needs of both ethnic groups in the area.
- SUBIR should continue its efforts in support of GEF and sustainable logging in the

Chachi area. SUBIR and its presence has a unique opportunity to act as a broker to insure that the agreements between the Chachis and Endesa/Botrosa are fair to the Chachis and will not lead to exploitation either of the people or their resources.

- SUBIR needs to identify a mechanism to disseminate information to the various communities in the region regarding models for forest management, marketing opportunities, prices for lumber and the issues of rights, so that the both Chachi and Afro-Ecuadorian communities have the power to ensure good faith negotiations with the logging companies of the area. One possible goal is the development of a sustainable logging plan for the region that would involve the participation of the communities, SUBIR, logging companies, other interested nongovernmental organizations and the Government of Ecuador.
- Forestry interventions should include management plans for the exploitation of secondary forests.
- The forester from the Borbón office should visit the Awa community of Arenales on the River Onzole to learn about UTEPA's forest management program sponsored by the ODA and how wood is harvested and marketed from that zone are marketed. If deemed positive, the forester should return with members of selected communities to promote an exchange of information and approaches. ODA/UTEPA may offer an opportunity for collaboration in sustainable forestry for the region.
- SUBIR should continue its contact with GTZ in Quito to discuss possible collaborative programs in forest management. The GTZ representative informed the team of his willingness to collaborate with SUBIR in the provision of technical assistance and funding for forest management initiatives.
- SUBIR should contact representatives of SMARTWOOD to request support in analyzing the market for sustainably managed wood products from the zone.
- Forestry management initiatives should include a regional marketing analysis as part of the community forestry management plan. SUBIR's efforts should include strengthening the communities so that they can better negotiate with logging companies and wood buyers and obtain the highest possible prices.
- SUBIR should maintain contact with the World Bank to help promote the GEF initiative and determine how best to play a role in providing adequate oversight that will ensure that sustainable practices are employed.
- Establish a pilot industrial management unit. The Ecuadorian timber industry has little incentive to practice sustainable forest management unless it can secure long-term, renewable access rights. SUBIR should test the hypothesis that the timber industry can sustainably manage forest resources, by promoting that INEFAN establish a pilot industrial forest management site, of 15,000 to 20,000 hectares, in a Cotacachi-Cayapas Ecological Reserve in the buffer zone. SUBIR can expand its already planned assistance to community forest management to provide technical assistance for environmental assessment, inventory, and management planning, and sustainability certification. Costs for inventory, management planning, and certification would be borne by the cooperating industry. Close attention will be paid to impacts on ecosystem structure and biological

diversity and on compatibility with people living in the area. The long-term financial sustainability will also be assessed. If this model enterprise proves ecologically, socially and financially sustainable, changes in policies governing current timber land access can be explored.

- Field staff needs to ensure that proposed forestry practices are consistent with the terms of the SUBIR environmental assessment. In areas where cutting primary forests will take place an environmental assessment will be required to comply with Section 533 (c) (3) of the fiscal year 91 Foreign Assistance Act. A programmatic forest management EA could provide guidance for future site-specific activities. This has been done by USAID in Bolivia and Guatemala.

12.8.2. Intensification and diversification of land use program

Progress in this component involves two modalities of work: direct implementation by SUBIR and support for second-level organizations, with primary emphasis on direct implementation. The evaluation team visited various agricultural sites in the four regions and had serious questions about some of them, especially with regard their pertinence to the goal of protecting biological diversity.

In Cayambe-Coca Ecological Reserve-Borja, the evaluation team visited a series of nutritional gardens and community guinea pig raising activities directly implemented by SUBIR Project staff. The Project enjoyed high acceptance by the communities and demand for support appears to be increasing. However, the team had difficulty seeing the connection between nutritional gardens, the protection of the Reserve and the sustainable use of biological resources. Explanations given by the Borja team indicated that the efforts represented a response to community desires and would serve as a base of support for future activities. However, the projects are located far from the Reserve, do not respond to specific threats against the Park and do not offer significant income generating alternatives at the scale practiced. As such, they do not appear to represent the best use of scarce SUBIR time and resources.

Box 1–10. A potentially sustainable agrosylvopastoral management scheme

In the buffer zone surrounding the Cayambe-Coca Ecological Reserve, SUBIR staff and a progressive dairy farmer are jointly conducting on-farm, participatory action research on a new scheme of agrosylvopastoral integration. It holds forth promise of halting soil degradation and, with it, the further expansion of pastures into forests and protected areas. The farmer, Mr. Rodríguez, owns a sloping 11 ha "spread" on which he runs a small dairy herd at a stocking rate of 1.5 head/ha. Before SUBIR began work in the region, Mr. Rodríguez simply rotated his herd through 20 small paddocks into which he had divided the 11 has. But even this careful strategy proved inadequate for maintaining animal health, nutrition, and consequently milk yields. He explained that his formerly forested land had been completely cleared and continuously ranched for some 60 years now, leaving the soil hard, compacted, and infertile, and therefore making for low and poor-quality forage production.

Working with vegetative materials, seedlings, and ideas supplied in part by SUBIR and in part by himself, Mr. Rodríguez is experimenting with planting one of his paddocks in a mix of: nitrogen-fixing trees that also produce highly palatable leaves and seeds; hardy, nutritious grasses; careful spaced banana trees and, in a small plot behind his home, sugarcane—these crops will see his stock through the critical dry-season forage bottleneck from November to February; and for a protein-balanced ration, a forage-quality bean that loosens the soil and, again, adds nitrogen. He also knows to keep a 5 percent mix of native weeds in his experimental "forage bank," so as to provide his stock with necessary trace minerals.

At first, Mr. Rodríguez and SUBIR's agrosylvopastoral experiments did not seem very promising. The tree species they initially selected

The team did see some promising participatory research in sylvopastoral techniques. The fact that the area is primarily dairy and that demand for pasture land under current extensive grazing practices could threaten the Reserve in certain areas, silvopastoral effort and intensification of production appear to offer a viable economic alternative under the Project (Box 6–1)

Agricultural and agroforestry activities in the upper Cotacachi-Cayapas Ecological Reserve-Cuellaje in coordination with CARE-PROMUSTA and ATAACU have been successful and likewise respond to potential threats to the Reserve (see Box 3–3).

In the lower Cotacachi-Cayapas Ecological Reserve agricultural activities have been scattered among many communities and have varied in their impacts. On the lower Cayapas River SUBIR contracted FUNDEAL to carry out agricultural activities in the Chachi center of El Encanto. FUNDEAL established demonstration plots for rice and maize, with some intercropped vegetables. In plots visited by the evaluation team rice was planted in rows along slopes of approximately 10 to 15 percent. Land had been cleared and planted down to the riverbank, which contributed to erosion and possible rainy season flooding of the area. Techniques did not appear sustainable in the plots visited. The FUNDEAL agronomist, subcontracted by FUNDEAL, had no previous lowland tropical agriculture experience. The team questioned both the technical feasibility of the FUNDEAL proposal and the technical ability of SUBIR to evaluate the proposal. In addition, SUBIR and FUNDEAL relations appeared strained, causing problems between SUBIR and the Chachis.

Women expressed satisfaction with the diversification of production in their raised canoe gardens promoted by FUNDEAL and were interested in artisanry and especially, poultry-raising (Box 6–2). Agricultural activities were located three hours down river from the Reserve and there was no indication that the farmers related what they were doing to the Reserve in any way.

SUBIR directly implements agricultural activities closer to the Reserve. SUBIR promotes agroforestry that includes bananas, some other tree crops and corn, vegetables, peanuts, soybeans, and rice with no fertilizers or pesticides. The rice production visited was impressive and planted on appropriate land. Farmers were also excited about soybeans and production looked good at the time of the visit.

Box 1–11. Local knowledge and resource use and management models

All along the muddy brown waters of the Cayapas River and its tributaries in the lower buffer zone of the Cotacachi-Cayapas Ecological Reserve, the banks are lined with Chachi and Afro-Ecuadorian dwellings precariously perched on spindly-looking stilts. All around these houses, too, are rich forest gardens that may extend as much as one-half a kilometer or so along either side of the house, and who knows how far inland. In a single such garden, one may find as many as 20 tree, grass, and tuber species being managed and harvested, using the local knowledge handed down from generation to generation along the waterways. Nor is this to count the woman of the house's vegetable garden, cultivated in a miniature canoe also set up on stilts alongside the home.

These indigenous forest gardens yield a mouth-watering variety of tropical fruits virtually year-round: banana, coconut, citrus, zapote, and others that have no name in English, and possibly not even in Spanish. They also produce coffee, cacao, cane, and rubber; native and, nowadays, introduced timber species for sale to lumber companies down-river or for home and community construction needs; of course, the ivory of the jungle—tagua nuts—for marketing to itinerant merchants; grasses and huge leaves for use in crafting, thatching the roof, or wrapping or cooking food; a bounty of both wild and domesticated tubers that mean no one here is ever very likely to starve to death. And who knows what other food, fiber, medicinal, aromatic, or other plants may be maintained in the forest garden understory?

Some of the tree species found in these lush forest gardens help to halt soil erosion down the steep river banks; some are also said to have soil amendment actions. Apart from these terse facts however, relatively little appears to be known about these ubiquitous forest gardens of the Amazon—how they are consciously composed, tiered, and managed within the secondary growth forests in which they are planted; what amount, array, and value of products they yield for home consumption or sale, whether across the lifetime of a given species or even across a single year; what multitude of aesthetic, medicinal, dietary, and environmental services they serve; and above

People in Playa de Oro consume soy directly as bean and process it for milk. The community expressed disappointment with the improved corn varieties introduced by SUBIR, preferring a native variety because of its greater yield and lower risk. It was difficult to tell if the improved variety performed poorly due to the wetter than normal year (SUBIR explanation), poor timing in sowing or its inappropriateness for the conditions in the zone. The plots around Playa de Oro formed part of a larger integrated SUBIR effort and people in the area understood the relationship between the economic development activities promoted by SUBIR and Reserve protection. Plots around San Miguel could not be visited because of low water levels.

The evaluation team found the SUBIR technical staff enthusiastic and full of ideas, but their experience in lowland tropical agriculture was limited. Many of the efforts were experimental with uncertain results for the communities. The team did not observe the incorporation and improvement of forest garden techniques nor did the project appear prepared to respond to the demand for increased protein through aquaculture and micro-livestock production (Box 6–2). The domestication of wild rodents (Box 7–1) in Playa de Oro was a positive exception. Current agricultural practices are subsistence oriented. Production for regional markets was not considered at this time as forest products (and gold in Playa de Oro) represent the main source of income.

12.8.4. Recommendations

- SUBIR needs to hire full-time experienced technical assistance in lowland tropical agriculture to support activities in the lower Cotacachi-Cayapas Ecological Reserve and Cayambe-Coca Ecological Reserve zones. The goal should be to achieve sustainable production and to take advantage of mainly regional markets for locally produced agricultural goods.
- SUBIR should focus its agricultural activities (crops, livestock, tree crops) in areas near the Reserves and integrate these activities with other components. This will allow the Project to focus its funds and staff with greater impact.
- Agricultural production should be diversified in the Cotacachi-Cayapas Ecological Reserve to include agroforestry, crop production, micro-livestock and aquaculture to meet the economic and nutritional needs of families. Ecologically sound practices should be employed including the study and, if warranted, improvement of indigenous forest gardens.
- SUBIR should redesign its agricultural component in Cayambe-Coca Ecological Reserve, especially the nutritional gardens scattered throughout many communities. Nutritional gardens may be appropriate in one or two communities where concentrated efforts are underway as part of a larger sustainable use, biological diversity protection effort. SUBIR should follow up on its promising sylvopastoral activities in Cayambe-Coca Ecological Reserve-Borja and promote intensive pasture management among the dairy people to relieve pressure on the Cayambe-Coca Ecological Reserve.
- SUBIR should not renew its contract with FUNDEAL. The team's assessment is that the SUBIR's agricultural program currently receives few benefits from support to

FUNDEAL. This will be the case unless SUBIR decides to provide it with technical and institutional strengthening. FUNDEAL's area of operation would also have to move closer to the Reserve to be integrated with other activities.

- SUBIR should continue its work with ATAACU and the CARE/PROMUSTA project, but focused in those areas of upper Cotacachi-Cayapas Ecological Reserve where the threats to the Reserve are increasing.
- The SUBIR staff should ensure that in creating economic development opportunities through improved land use, the connection between improvements in income and the sustainable use and protection of biological resources is clear to project beneficiaries.

12.8.6. Pilot projects in collection, processing, and marketing of biological resources program

The majority of activities in this program have focused on the development of artisan products and crafts made from forest products collected by people in Cotacachi-Cayapas Ecological Reserve. Women have made and sold various products. Conservation International purchased place mats to market in the United States and SUBIR reports that another order is due. Women make reed baskets and articles from tagua for the tourist industry. This program has awakened a great deal of interest among women, some of whom practiced agriculture and now prefer the lighter work involved in craft making.

The team learned that in local markets women earn 800 sucres for a large basket that takes two days to make, including the collection of the reeds. This compares to 6,000 to 8,000 sucres per day for men working with chain saws. Women expressed frustration at the low prices paid them for their products. Women use three reeds in production, rampira, chocotillo, and piquigua. Anecdotal information indicates that a large supply of reed is available for exploitation, but no systematic studies on sustainable harvest rates and possible regeneration or replanting have been carried out. Except for the connection to international markets, no national or regional marketing studies for these products exists. Women are anxious to produce more goods and are awaiting word from SUBIR to do so. Expectations have been raised in many communities in the region.

12.8.8. Recommendations

- SUBIR should carry out studies on sustainable harvesting rates for forest products used in the production of craft items before promoting production on a large scale. Studies on regeneration and replanting should also form part of this plan.
- SUBIR should carry out marketing studies for forest products and for artisanry goods in regional and national markets. Expansion of contacts with international markets should also continue. These studies should occur before motivating people to participate in an activity with uncertain income earning opportunities. Craft production should move cautiously until markets are developed.

12.8.10. Strengthening of technical high schools program

No activities have been programmed under this subcomponent, but many school directors anticipate receiving support from SUBIR for their institutions. The team questions the relevancy of providing technical support to the schools, questioning the sustainability of the endeavor. Greater long-term benefits may accrue to providing field work opportunities for students and teachers on sites where SUBIR activities are underway. This work would be supervised by competent SUBIR field staff.

12.8.12. Recommendations

- SUBIR should place activities in this component on hold for the remainder of Phase I and a program that includes field work experience for teachers and students that benefits SUBIR programs should be designed for Phase II.

14. Research and Monitoring

14.2. Component Purpose and Activities

As per the project plan, the purpose of this component is to increase scientific knowledge of biological resources and their sociocultural context in a manner directly applicable to Project development; to establish a database for protected area managment and planning; to identify possible economic uses of the biological resources in buffer zones; to monitor the impact of Project activities on both the biophysical and human environments; and to scientifically evaluate ecological and socioeconomic factors and policies affecting sustainable use of renewable resources.

Component Activities:

- Carry out baseline biological inventories.
- Complete socioeconomic baseline studies (discussed under the "Organizational Development Component").
- Initiate and support training programs related to scientific research, monitoring, and related topics.
- Develop an applied research program.
- Put into place an environmental monitoring program.

14.4. Component Operation and Implementation

Component activities closely follow objectives presented in the original Project Paper with one major difference, both plans integrated biological and socioeconomic research into the same component. While proposed biological and socioeconomic research activities are sometimes listed together in SUBIR operational plans, this component has focused primarily on biological research. For the most part, socioeconomic studies have been addressed in the organizational development component.

The SUBIR coordinator develops these work plans in close collaboration with Ecociencia, the nongovernmental organization doing the bulk of the biological inventories, training, applied research, and monitoring, and with the help of the Wildlife Conservation Society, one of the SUBIR consortium members. Many component activities address information needs identified in the diagnostic studies (basic floral and faunal surveys). Others, such as the training initiatives, reflect the urgent need for skilled scientists capable of providing these data. Some activities (e.g., a study on Spectacled Bear depredation on crops) respond to direct requests from communities for development-issues information. Others represent unanticipated opportunities that support component objectives (collaboration with the Greentree Group).

Other SUBIR staff at the national and regional level are only marginally involved in planning and implementation. In a sense, Ecociencia represents the biological research arm of SUBIR.

Ecociencia includes a staff (both permanent and contracted) of over 70 individuals. Of these, around 20 are “parabiologists”; community members being trained in basic research methods. SUBIR has supported institution building initiatives with Ecociencia and with assistance from the Wildlife Conservation Society and other nongovernmental organizations, co-sponsored a number of training opportunities for their staff and researchers. SUBIR provides funds for student research grants, assists in developing standardized research methodologies and study designs, and, with the Wildlife Conservation Society, helped Ecociencia secure a $150,000 grant from the MacArthur Foundation. A SUBIR liaison within Ecociencia assists in managing these programs.

Nearly all of the research and monitoring activities proposed in SUBIR's 1993 Operational Plan were achieved. Of some 24 projects (of which 8 were not originally programmed) over 75 percent were completed. These included: institution building activities with Ecociencia, several training courses (e.g., Project design, conservation biology, research methods) for staff, students, and researchers, support for research activities (primarily floral and faunal inventories or ethnobotanical or ethnozoological studies), development of land use maps, and studies of biological resources of economic value.

Most activities not completed were postponed because agreements with communities or residents of the study sites (a SUBIR requirement), were, for various reasons, never developed.

Phase I Research and Monitoring component activities have resulted in a number of products including:

- A trained and highly motivated cadre of Ecuadorian scientists.
- A greatly strengthened research institution (Ecociencia).
- Standardized research methodologies.
- Baseline information on the floral and faunal resources of sites where SUBIR is involved in Project activities.
- Data on resources of economic, medicinal, and cultural importance (e.g., cabuya, sangre de drago, ratones silvestres).
- Development and application of geographic information systems and global positioning technologies to land use issues such as land titling programs (a joint project with FCUNAE).
- Improved understanding of human impacts on natural resources (e.g., impact of barbasco on aquatic invertebrates, and of road construction in Yasuní National Park).
- Initial training of community level “parabiologists” (20).

14.6. Evaluation Findings and Conclusions

This component is creating both the biological (though not the socioeconomic) data base and the human resources needed to help design sustainable development and wildland management projects. It is also beginning to bring second-level organizations and the communities themselves into the collection, analysis, and utilization of this information, a unique contribution to Ecuador's conservation efforts. While some success in melding biological and socioeconomic

research needs and programs within SUBIR itself has occurred, these two essential pieces of the sustainable development puzzle are not well-integrated within the organization.

At the beginning of the SUBIR Project, many of the research and monitoring needs were quite apparent. What was not so obvious was the fact that there were few individuals or organizations within country that could efficiently and effectively supply these data. SUBIR wisely choose to build local capacity to carry out sound research and monitoring, rather than importing scientific expertise. Their institution building efforts with Ecociencia and the training and research opportunities they have provided to fledgling Ecuadorian scientists is perhaps SUBIR's most significant accomplishment to date.

There is some concern about the sustainability of Ecociencia, particularly if SUBIR funding is reduced or cut. But the dearth of well-trained scientists coupled with the ever-increasing needs for such expertise portends a bright future for Ecociencia and the researchers they have trained. Indeed, already some of them are being hired away by other organizations.

Focusing primarily on one research institution has made good sense. The results are obvious. But a number of other institutions could benefit from similar technical and financial support. Some resentment towards SUBIR's relationship with Ecociencia is evident. A conflict has arisen between the Catholic University in Quito and Ecociencia (whose permanent staff mostly represent former Catholic University faculty). The University insists that if SUBIR or Ecociencia is going to supply funds for student research and thesis work, University faculty should receive this money and control its use. This has caused a number of problems and has spilled over into other SUBIR research and monitoring activities, such as efforts to work with MAXUS oil company on the establishment of a research station in one of their facilities in Yasuní National Park (a project that also involves Catholic University).

Planning for component activities mostly originates in Quito with little input from the communities themselves. But the agreements that SUBIR requires before Ecociencia begins research in a community has helped to raise Ecociencia's awareness and sensitivity to local needs and concerns. In a few cases, this consciousness raising has resulted in community requests for assistance in investigating issues of local concern (problems with Spectacled bears). The parabiology program that involves and trains community members in research techniques, could also prove to be an extremely important vehicle for grass roots involvement in planning and resource management. The parabiology program has had mixed success, but will become a major component activity beginning this year with additional training already underway.

The research component is also demonstrating the potential to create lines of communication between the conservation community and traditional adversaries. Ecociencia's newly initiated environmental education program with the Ecuadorian military could not only have a tremendous impact on this influential and widely dispersed segment of society, it could also become a model for many other countries. Though efforts to carry out joint projects with prominent resource extraction industries such as Endesa/Botrosa and Maxus Oil Company have not come to fruition, they remain a possibility and SUBIR should look for opportunities to work with them (who are not going away any time soon) if projects can meet SUBIR goals.

Some regional second-level organizations brought into research component activities have helped to link researchers with local communities. ATAACU near Cotacachi-Cayapas Ecological

Reserve, and FCUNAI along the flank of Yasuní National Park have both helped to facilitate research activities in communities. There has been misunderstandings with local residents about some of these projects. For example, in Añangu, where SUBIR is involved in ecotourism activities, the community thought that they could only participate in one SUBIR component activity at a time and decided not to accept Ecociencia's request to sign a research agreement. With this misunderstanding cleared up, research is moving ahead.

While producing sound data is critical, putting them in a useful form and getting them in the hands of the people is of equal importance. In Sinague, community members were not satisfied with a technically oriented document on results of an ethnobotanical study carried out in their community. Apparently, presentation of this scientific publication is normal Ecociencia practice and there was every intention on producing a more user friendly version. This in fact was communicated to the community by means of a letter from EcoCiencia. Unfortunately, community leaders had not shared the letter with others and this led to a lack of communication.

Dissemination of research could also benefit other scientists and conservation efforts both within Ecuador and throughout Latin America. Publication and distribution of this information has awaiting sufficient research results. A scientific seminar to be held in 1994 will feature presentations and abstracts from a number of SUBIR-sponsored studies.

Utilization of this information has not fully occurred even within SUBIR itself. Research results are not widely shared with field staff and information that could be critical for protected areas, ecotourism, and improved land use component activities is not always used. This could be because projects have not evolved to the point where such information is needed (reserve planning efforts, development of interpretive materials, etc.). But it is important that mechanisms be put in place to insure that information flow is timely and effective. Component coordinators need to be aware of research activities and findings and feed this information to their field staff and others (such as INEFAN reserve managers).

Through Ecociencia, this component is also pioneering the use of new research tools such as geographic information systems and global positioning that could have broad application to other SUBIR efforts. Internally, however, technology transfer does not always occur. Ecociencia's use of global positioning for land titling initiatives near Yasuní National Park and Cotacachi-Cayapas Ecological Reserve could be used to finish off the demarcation of reserve boundaries, a critically important SUBIR/INEFAN initiative that is making only incremental progress. Research data should already have a role in monitoring impacts of SUBIR development activities such as agroforestry and ecotourism. It is unclear if this is always the case.

A good deal of the success of this component is due to the technical backstopping that the skilled component coordinator receives from the Wildlife Conservation Society. They have provided a good deal of technical assistance, and helped to identify and bring in consultants for short-term, specific activities. In this case, a SUBIR consortium member has played an important and constructive role in furthering the goals of the Project. The staff of Ecociencia and their dedication and hard work is also of critical importance and with or without SUBIR, they will be making a significant contribution to conservation for a long time to come.

As the SUBIR Project evolves, the integration of biological research and monitoring with socioeconomic and land use activities will become ever more important. Efforts to market

nontraditional forest products, for instance, must be based on a thorough knowledge of the ability of the resource to sustain this harvesting. Understanding the cultural and economic underpinnings of resource use is as important as determining its environmental impacts. This exchange and integration of socioeconomic and biological information remains a challenge for SUBIR. While progress is being made, the melding of these elements must be at the forefront of SUBIR's research and monitoring efforts.

14.8. Recommendations

- A proposed SUBIR bulletin that highlights the activities of all SUBIR components and includes recent publications and research reports should be published and widely distributed as soon as possible.
- SUBIR should consider initiating a training and institution building program (similar to that carrying out with Ecociencia) aimed at bolstering the capacity of Ecuadorian institutions involved in social science, human ecology and economic research.
- SUBIR's research activities, both biological and socioeconomic, should be melded into one component.
- The monitoring of SUBIR impacts needs to be expanded and more fully developed. Geographic information systems could provide a useful tool for monitoring SUBIR's impacts. The Research and Monitoring program needs to coordinate more closely with other SUBIR component activities that could be having environmental impacts (agricultural activities, ecotourism, etc.).
- USAID should consider providing an endowment to Ecociencia to support its efforts and expand its activities to serve as the research arm of the Project.
- SUBIR, through this component, should continue to maintain lines of communication with representatives of the resource extraction industries and seek opportunities for collaborative efforts that would further SUBIR goals.
- The parabiologist program should continue to expand and perhaps be linked to the “guardaparque comunitario” program. Parabiologists should all receive a SUBIR field kit (boots, cap and Tee Shirt, raingear, Swiss army knife, etc.) as partial support for their services and to build loyalty to the program.
- Ecociencia research should begin to broaden its scope from species and site-specific investigation to broader, ecosystem process related studies. This information will be needed to design management plans that will maintain, and if necessary, restore ecological integrity.
- SUBIR should assess the utility and financial sustainability associated with operating the proposed Amazonian research station at the MAXUS facilities in Yasuní National Park. This Project is important for many reasons, and SUBIR's involvement would help to insure that it does, indeed, realize its potential. With the support of the Wildlife Conservation Society, SUBIR should consider providing a full time PhD level scientist/manager as its contribution to the project of the site is suitable.

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Box 1–12. From the laboratory to the dinner table

In the region along the Cayapas, Santiago, and Onzole Rivers, Afro-Ecuadorians and Chachis hide rustic log-fall traps along forest trails and in forest gardens. These traps yield small mammals, flattened by the weight of the traps, and collected in reed baskets by women and children making sorties into the forest and daily visits to their forest gardens. These small rodents represent an important source of protein in the diets of both the Afro-Ecuadorian and Chachi populations in this region.

As part of its research and monitoring efforts SUBIR carried out a small mammal hunting study between October 1992 and October 1993. The study was based on 109 family interviews in 28 communities with the majority Afro-Ecuadorian families. The study learned that people use five different types of traps. Children use two different live "box" traps while adults set three different log-fall traps depending on the type of mammal to be captured. People bait their traps with bananas, especially around forest gardens, and with native fruit along the forest trails. People demonstrate a preference for setting traps in forest gardens rather than in the forest due to the time required to collect from the latter. The study indicated that the species most frequently captured was *Proechimys semispinosus* and this species was captured more often around family gardens.

The study also indicated that over hunting of larger mammals and their virtual extirpation has placed a premium on small mammals and riverine resources as sources of protein. Fewer traps are laid today than in the past because fewer animals are captured and the amount of time invested is not worth the gain.

Study findings suggested an idea to the SUBIR staff and the community of Playa de Oro: captive breeding of *P. semispinosus* and other popular species. The management of the enterprise would be in community hands with technical assistance provided by SUBIR. The community is excited about the program as a way to ensure the sustainability of these small mammal fauna. SUBIR will provide the community with metal traps to capture the animals for transfer to the breeding pens and then teach breeding abc care techniques to ensure success.

The development of scientific research that can be applied to meet people's economic and nutritional needs, while preserving biological diversity represents an important achievement of the SUBIR project. Soon healthy rodents will be housed in pens and transferred to the dinner table, sustaining the community's access to protein and helping to preserve an important food source from over hunting and possible extirpation.

Box 1–13. Community biology: A people's approach to biology

Throughout the humid tropical forests of Ecuador-trained Chachi and Afro-Ecuadorian biologists carry out botanical and ornithological studies. After their research they do not return to universities or laboratories, but to their villages and communities. These researchers are parabiologists trained by the SUBIR project. They form the backbone of the research effort to identify the biological diversity and abundance of species in and around protected areas near to their villages. The parabiologist program represents an effort to involve local people in the collection of data and in that way, take advantage of the knowledge they have about the ecosystems in which they live. This base knowledge is fundamental to understanding and improving ecosystem management. Through the program better communication is opened between the communities and the SUBIR project.

Bird species identification, identification of indicator species, creation of transects, identification of species threatened by hunting, flora and fauna inventories, and the learning of the scientific names of indicator species represent the tasks of the parabiologist. Today 20 local "scientists" with a vast local knowledge and training in Western scientific techniques, are helping to increase the world's knowledge of the great diversity of the rain forests. At the same time SUBIR has developed a strong cadre of local villagers committed to research and dedicated to the conservation of this diversity for the benefit of their communities. Local participation, biological research, and the capturing of local knowledge successfully have come together to bring science close to home and learn from the people ultimately most concerned about the fate of the forests.

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Box 1–14. Ecociencia: Real science, real scientists

Ecociencia is now considered to be the premier scientific research institution in Ecuador. Its an accolade that is well-deserved, but it hasn't happened by accident. Several years of hard work by Ecociencia staff, with technical and financial support from SUBIR, has built a solid foundation for this nongovernmental organization.

SUBIR first identified Ecociencia as a likely candidate for a major institution building initiative when the SUBIR project first began. Baseline data was needed to help define its activities and project sites. But good data require good scientists. At that time, these were few and far between or just not available. With the help of the Wildlife Conservation Society, a SUBIR consortium member, representatives of SUBIR, and Ecociencia sat down and hammered out a plan. Research methodologies were designed and standardized, and taught to Ecociencia researchers. Funds were provided to support investigations and university students were recruited and provided with research scholarships.

A number of high caliber scientists have been brought in, but generally for training, not research purposes. The goal is to build Ecuador's capacity to field competent, enthusiastic scientists who can provide the data needed for conservation and sustainable development programs.

Ecociencia now boasts a staff of over 70 individuals, 20 of whom are parabiologists from rural communities. In addition to field research they have mounted a geographic information systems program and an innovative environmental education campaign aimed at the Ecuadorian military.

Ecociencia is a SUBIR success story. But with or without the assistance of SUBIR, they are going to be around for a long time. And that, is precisely what the SUBIR project is about.

16. Policy Analysis

16.2. Description of Component Purpose and Strategy

The component strategy as outlined in Annex III.H of the Project Paper established the following objectives for the SUBIR Project in an effort to address the loss of biodiversity related to unsustainable natural resource policies:

- Analyze, develop, and propose local and national policies to support conservation as quickly as possible in order to prevent the degradation of natural areas and to establish an adequate system of administration;
- Formulate and promote legal reforms to achieve the rational use of Ecuador's natural resources.

16.4. Component Operation and Implementation

Policy analysis and dialogue initially did not represent a thrust of the SUBIR Project although it was discussed in the Project Paper annex. In part, this was due to differing philosophical beliefs between SUBIR staff and USAID as to what policy was and how it should be built into SUBIR. Some of the difference lay in the belief of SUBIR staff that the Project as a whole was a policy demonstration that would build on problems identified in the field that must be addressed through legal and regulatory reform at the national and regional levels. This approach appeared incompatible with USAID's view of policy as a macro-economic analysis of the impacts of policy on natural resources. Concern existed that policy analysis would result in publications but that the analyses either would not translate into actions that would specifically address bottlenecks to successful Project implementation or contribute to effective policy dialogue.

USAID/Ecuador addressed this impasse by channeling SUBIR funds to an existing Ecuadorian nongovernmental organization, Fundación IDEA, which had a successful track record of macro policy analysis in agriculture and natural resources.

16.6. Evaluation Findings and Conclusions

The findings and recommendations from the IDEA research are believed to have had a significant impact on thinking in Ecuador about natural resources use and management and much of it has been of relevance to the activities of SUBIR. Several of the most important issues researched by IDEA, and for which there are various publications (including the USAID funded “Development and the Environment: Ecuador's Policy Crisis”) are: agroforestry, agricultural colonization, deforestation, oil development, and pollution control, parks entrance fees as a mechanism for parks management and financing, control of the trade in wildlife. Some of these studies have resulted in important policy changes that offer possibilities to improve natural resources management in the country. In addition, the work has provided policy makers and

international development directors with background on the policy environment and suggestions for action.

A good case in point is the matter of parks entrance fees. An analysis determined that entrance and other fees at Galapagos, Ecuador's crown jewel park, could be raised significantly for foreigners, without loss in attendance. This has been implemented. This increase in fees coupled with suggested berth taxes to raise additional funds from tourists visiting the Galapagos has significantly increased government revenue from tourism.

Fees have been raised, not just in the Galapagos, but in all parks and reserves. There has been no decrease in attendance in Galapagos, but there have been significant effects elsewhere, including one of SUBIR's work areas, the Cotacachi-Cayapas Ecological Reserve. At the Reserve entrance near Laguna de Cuicocha there is a resort with a restaurant that is frequented by Colombian tourists. Far more Colombians visit the lake and pay admission fees to the Reserve than Ecuadorians. When the new fees for foreigners were instituted, attendance by Colombians, and subsequent revenues, plummeted, since the income level of the Colombians differs little from Ecuadorians. In the face of opposition and complaints, the local park administrator then made a unilateral decision to abolish all entrance fees.

These problems at Cotacachi-Cayapas Ecological Reserve do not mean that raising fees is wrong or that macro analysis can't find the right answers. It does mean however that macro analysis must be complemented by similar analysis of local/regional impact and by careful consideration of institutional factors as they affect the application of policy. Fee increases should be applied, but need to take into account the clientele and willingness to pay criteria. It is in this type of work that SUBIR is well positioned and for which it is most suited in terms of policy analysis coupled with expanded socioeconomic research.

In its concern that SUBIR address natural resource policy analysis and dialogue, USAID/Ecuador has issued an amendment to the Cooperative Agreement, providing $651,783 for a SUBIR Project policy component in 1994. Fifty percent of the funds are destined for policy reform and analysis and the rest for post-graduate scholarships. The purpose was to contract IDEA to carry out policy analysis, policy promotion, and analysis of laws and regulations affecting natural resource use. SUBIR requested a proposal from IDEA. IDEA has yet to submit the proposal. The team detected a combination of miscommunication, institutional jealousy, and IDEA's current lack of in-house natural resource policy analysis capability as reasons for IDEA's lack of response.

As a result, SUBIR sent out an proposal request to contract for policy work as described above. Included was the requirement that whomever is contracted must work with IDEA in developing and implementing an effective mechanism for disseminating the research and using it to establish an effective dialogue (work for which IDEA is particularly well known).

The proposal request simply identifies broad areas for which analysis was desired and requiring that the contractor work with SUBIR and its relevant staff in determining the actual scope of work. Given the breadth of the terms of reference, SUBIR will require staff competent in the natural resource policy arena to oversee and guide the execution and scope of the contract.

SUBIR's presence in areas where conflicts over natural resource use exist, offers it the advantage of identifying and addressing policy issues at the source of the conflict and feeding

this back to the national level. To be truly effective, SUBIR needs the freedom to engage tactically and strategically in policy initiatives and engagements on key resource issues (such as forestry, mining, oil development) and meet and work with some of the major private sector players in these areas. At the present, SUBIR's hands are tied.

In the past year policy related concerns related to forestry and petroleum became significant in Cotacachi-Cayapas Ecological Reserve and Yasuní National Park, respectively. SUBIR staff felt that the importance of these issues required the development of a policy dialogue with lumber and petroleum interests. Failure of the Consortium Executive Committee to come to a consensual agreement on how best to respond thwarted SUBIR's ability to engage in policy dialogue in these areas.

Prior to that decision the basic approach for policy engagement had been to attempt to meet with industry representatives to discuss matters of common concern and to determine where there is sufficient commonality of interest to engage in supportive/complementary or joint efforts. The best example of this (and unfortunately the least successful) occurred in the Cotacachi-Cayapas Ecological Reserve around the issue of community forest management on lands in the Cotacachi-Cayapas Ecological Reserve belonging to Chachi communities. This is discussed in more detail in Chapter 6 on land use. As noted above, efforts at engagement have been delayed as the Consortium worked to develop a policy on the issue.

Consortium concerns about appearances of involvement with the oil industry halted efforts by the Research and Monitoring component to work with MAXUS, an oil firm given the concession for development in a portion of the Yasuní National Park. SUBIR efforts here were not to attempt to develop oil policy, but rather to work with the company to guide and help develop the scientifically most appropriate monitoring and assessment program about the impact of MAXUS' 150 kilometer road through virgin tropical rain forest, an unparalleled opportunity that could not be finalized. Forbidding direct SUBIR contact with MAXUS is at least partially responsible for the limited monitoring and assessment in this area. However, renewed contact between SUBIR and MAXUS appears likely and this issue can be addressed.

Although unable to consummate policy efforts in the controversial policy areas of oil and forestry, SUBIR has been able to initiate an innovative program that promises to have a major effect in policy evaluation and implementation. Under the organizational strengthening component SUBIR is successfully training paralegals to formulate needed community development policies to address the loss of biological diversity. Policies addressed include community organization, legalization of land ownership, and issues related to community relationships to protected areas, petroleum, mining, and community tourism. Policy issues identified at the community level can feed into the policy dialogue promoted at the national level.

The decision to include a policy component in the SUBIR Project is recent, even though SUBIR activities in policy were contemplated as early as the project paper. The evaluation team believes that SUBIR needs to focus on policy issues at the national, regional, and local levels in order to secure the success of the Project objectives. Threats to parks and to biological diversity arise from policies developed in Quito that negatively affect how resources are exploited and by whom. SUBIR's success may ultimately depend on resolution of a variety of economic and policy issues that increase the pressure on the resource base.

SUBIR needs to be aware and capable of dealing with resource policy dimensions at both the national and local level, and consider both the economic and community dimensions and impacts of policy. However, SUBIR's greatest contribution to policy development and dialogue comes from its position as an implementor of programs at the ground level. This unique experience and perspective must be nurtured and inserted into national policy dialogue.

One excellent way to promote a bottom-up approach to policy dialogue on how resource use in rural communities is affected by national policies is through the paralegal program (Chapter 3). The program will soon graduate its first 15 students. The students are currently working with their communities to identify urgent policy issues. The program represents a successful approach to address salient land tenure and resource access rights issues affecting the communities. The lawyer working with SUBIR has achieved remarkable results in training paralegals and in conducting legal environmental research. In addition he has provided legal support to other component activities and can play an important role in the translation of local concerns into legal or policy proposals. As a result the program's potential can be made real through concerted efforts to introduce the results of local policy analysis and dialogue into the appropriate avenues for national policy dialogue.

Equally important are well planned pilot projects that demonstrate new ways of dealing with critical policy issues. For example, forest policy initiatives that provide the appropriate incentives for management and sustainable use of forest products must be promoted and enforced. Given the contradictory policy environment in Ecuador and its impact on SUBIR's activities and on biological diversity, SUBIR needs to promote policy initiatives and participate in policy dialogue, both in forestry and other critical policy arenas. SUBIR can best contribute to the advancement of the policy dialogue through field experience that illustrates and illuminates the more abstract macro and economic analyses.

16.8. Recommendations

- The SUBIR Project should acquire in-house policy capability. The appropriate person should have training and extensive experience in natural resource policy matters, as well as experience in the Ecuador natural resources policy arena in order to effectively work with INEFAN, CAAM, the National Congress, and SUBIR nongovernmental organization partners to promote policy dialogue.
- The SUBIR policy coordinator should utilize available in-country capacity to carry out specific economic and policy related studies to provide information that can feed into overall policy dialogue and support field level activities.
- SUBIR should continue its dialogue with forest and logging interests to seek agreement on policies that promote more sustainable use of resources and improved management of the overall environment. SUBIR's goal should be to positively influence the practices of extractive resource industries in the country.
- The assignment of protected area income to support management activities represents one of the major policy initiatives that SUBIR has begun to address. Some percentage of the income earned from the Galapagos National Park, as well as the funds earned from

admission to other protected areas, should be assigned to the management of protected areas, rather than enter national treasury. This initiative represents an important follow-up to taxation and fee polices promoted and achieved by IDEA to increase revenue from tourist activities. Other protected area policies include the establishment of adequate fees in all protected areas of the country and the formulation of management strategies that include the participation of nongovernmental organizations. The policy initiatives should be fostered and continued.

- In the development of forest policy, SUBIR should actively coordinate with GTZ, which has a forestry policy unit housed in INEFAN. GTZ expressed interest in collaborating with SUBIR both in policy and in the implementation of forestry programs in the Cotacachi-Cayapas Ecological Reserve region.
- In the policy arena SUBIR should build on the experiences gained in the implementation of field programs, to establish a bottom up approach to policy. This is SUBIR's comparative advantage in the policy arena. The policy coordinator should determine policy lessons learned from such implementation to identify approaches. The paralegals should play a major role in this process.
- SUBIR should serve as a catalyst to bring together Ecuadorian organizations so that they can develop and promote, where possible, consensus on policy initiatives.
- Policy analysis carried out under contract to SUBIR should be carefully monitored and phased. Each phase should allow for ample discussion with relevant Ecuadorian agencies and groups before proceeding to the next phase. Analysis need not represent a consensus of all those consulted, but it should note where there are differences and why.

18. Major Conclusions and Recommendations

18.2. Achievements and Successes

The most critical question for the Phase I evaluation is whether experience to date justifies the continuation of SUBIR in Phase II. The simple answer is yes. The more comprehensive answer is that in spite of many problems throughout Phase I, there have been a number of achievements and promising results. The problems need to be dealt with and eliminated, not a simple or easy undertaking. The positive results must be analyzed, built upon, and further refined or stimulated. Among the many achievements and successes of SUBIR, the evaluation team finds the following especially noteworthy.

- With SUBIR's help, Ecociencia has become the premier biological research and training institution capable of supporting not only Phase II of SUBIR but similar initiatives elsewhere in Ecuador.
- SUBIR/Ecociencia research has yielded considerable baseline data on the biological resources of many of the Project sites, and has served as a fertile training ground for both scientists and the innovative concept of community “parabiologists.”
- The paralegal program represents a cutting edge initiative engaged in securing land titles and appropriate redress for rural people under conflicting Ecuadorian laws.
- The somewhat nebulous concept of grassroots ecotourism is beginning to take shape thanks to collaborative efforts between SUBIR and several local communities.
- INEFAN reserve staff, while few in number, have become more effective managers thanks to SUBIR-provided technical, logistical, and financial support and training. The staff of the Protected Areas Management component are to be commended in this regard.
- Through application of SUBIR technical assistance to INEFAN and development of an emergency management plan for Yasuní National Park, a precedent has been established for including indigenous peoples and their federations and other park neighbors in the development and application of management plans.
- As a result of SUBIR influence and technical assistance, a critical component of the upcoming GEF to strengthen the protected areas system has been improved and made consistent with SUBIR initiatives.
- “Guardaparques comunitarios”, an innovative approach to bolstering a weakened park protection system, has been spearheaded by SUBIR with the support of rural communities and indigenous federations.
- SUBIR has had a number of significant successes in strengthening and working through second-level organizations, such as regional community organizations and indigenous federations, to test and extend sustainable uses of biological resources. As envisioned in the Project Paper, second-level organizations made up of primary resource users can become effective and sustainable stewards of the environment. Such second-level organizations are likely to be more sustainable than remote and understaffed government

agencies or of the plethora of fledgling nongovernmental organizations in the capital city. SUBIR is to be commended for these efforts with second-level organizations.

- With specific national-level environmental nongovernmental organizations, SUBIR has helped define institutional mandates and advocacy niches, and strengthened their access to the public and especially the Government of Ecuador, in large measure through links with, and support to the national nongovernmental organization umbrella organization, CEDENMA.
- SUBIR-supported research is helping to refine resource management techniques needed for sustainable rural development (e.g., research on wildlife utilization and propagation).
- Community attitudes towards wildlife and wildlands appears to be changing. Reserves and parks are beginning to be seen by some as a resource to be protected, not a no man's land to be plundered.
- SUBIR is bringing cutting edge paralegal expertise and technology (geographic information systems and global positioning) to bear on old, intractable problems such as land tenure and titling.
- SUBIR has facilitated innovative information exchanges such as sending a contingent of rural residents from the lower Cotacachi-Cayapas Ecological Reserve to Mexico to visit a community forestry project. This experience provided evidence that (a) forests can be managed profitably and perhaps sustainably and (b) communities can organize to manage and market resources for their mutual benefit. As an added benefit, a private forest company representative traveled independently to the site, expanding his knowledge of community forestry and its potential role in total forest management.
- Through ethnobotanical studies and ecotourism programs, SUBIR efforts are giving recognition to local and indigenous knowledge and encouraging its recuperation.
- Some promising and/or creative products for sustainable resource use such as wallpaper from agave plants, medical products from *"sangre de drago"* and others are beginning to emerge thanks to SUBIR supported research.
- A SUBIR-promoted environmental education program aimed at the Ecuadorian military could prove to be one of Ecuador's most significant conservation initiatives. It could also prove to be a model for many other countries.
- Through SUBIR, connections are being made between local communities and businesses catering to the "green market" such as the Smart Wood and Green Tree initiatives.
- As a result of SUBIR dialogue and training, INEFAN now acknowledges the value of participatory approaches to protected area management and administration.
- The SUBIR Project served as a model for the development of an OAS initiative in San Miguel Putumayo. That project expects to link with the SUBIR strengthened nongovernmental organization, Ecociencia, and the prospects are high that Ecociencia will do a significant portion of their biological research.
- Policy studies carried out by IDEA with SUBIR funds led to raising of Park fees throughout the Park system, especially the Galapagos, and to imposition of a berth tax for Galapagos tourist boats, raising additional funds from tourism for the Government of Ecuador.

- SUBIR has made significant strides in opening channels of communication between environmental groups and natural resources related industries, particularly with Endesa/Botrosa in timber and Maxus in oil exploration. These established linkages, combined with SUBIR field efforts, demonstrate promise for influencing the improved management of resources by private sector entities.
- The consortium model may not have worked from a management perspective in the implementation of the Project, but input from the Wildlife Conservation Society, for example, contributed significantly to the success of the research and monitoring component of the program. The Wildlife Conservation Society brought significant financial and logistical support to the Project.

18.4. Problems and Prospects

Serious problems were identified by the evaluation team that must be rectified, or well on the way resolving, before authorization to embark on Phase II of the SUBIR Project. Solving these problems will require a major investment of time and changes in SUBIR structure and operations. Below, these major issues are identified individually and following each are "bulleted" recommendations.

A major concern of many both in and out of SUBIR relates to the *geographic coverage* of the Project. Cotacachi-Cayapas Ecological Reserve, Cayambe-Coca Ecological Reserve, and Yasuní National Park represent critical links in one of the planet's most important wildland corridors. Stretching from the mangrove swamps of the Pacific coast, up through cloud forests and páramos, and down to the Amazon basin, this corridor encompasses these three protected areas. The corridor also includes indigenous reserves such as the Huaorani and Awa territories. Not all the protected areas are contiguous, and none are well-protected. Colonization, resource extraction, and other developments are causing further fragmentation. Therefore, protection of all three areas is important for maintaining and restoring the ecological integrity of this corridor and its economic and scientific values. Coverage of the three areas is feasible in Phase II if SUBIR will focus and concentrate its activities on a small number of activities and sites in specific critical areas in and around these reserves. The Project need not undertake all component activities in each of the reserves, but could integrate those components and component activities that best respond to threats to biological diversity. It is preferable to undertake fewer activities than to withdraw from a protected areas because SUBIR's presence will contribute to learning about and protecting these important natural areas.

- Given the ecological importance of the three protected areas, investments to date in the three areas, and the importance of the Project's presence in establishing protection for the reserves, SUBIR should continue to work in Cotacachi-Cayapas Ecological Reserve, Cayambe-Coca Ecological Reserve, and Yasuní National Park. The breadth of activities programmed for each area should be scaled down significantly and search for greater impacts from concentrated efforts. Attention needs to be given to identifying, protecting, and restoring the critical processes and systems that ecologically link these reserves.

That said, a major finding of the evaluation team is that there was a *design flaw* in the Project Paper. In a Project Paper vision that was otherwise cogent, integrated, and guided by an excellent participatory paradigm of environment-and-development focusing on local resource users themselves, the major shortcoming was a highly unrealistic appreciation of the geographic spread and logistic difficulties of simultaneously initiating many activities in three major protected areas during the Project's first phase. USAID/Ecuador states that it lobbied against this ambitious plan at the time of Project Paper design, but ultimately bowed to Consortium insistence that this ambitious plan was "do-able." In retrospect, however, this assessment was incorrect. The Project should have started with only one such area, expanding into a second (and possibly a third) only as of Phase II. But as noted above, work has been initiated in three sites already. Given the investments to date plus the compelling arguments for protecting a conservation corridor, at this point it makes little sense to simply drop one.

A corollary of the Project Paper's design flaws in timing of expansion of activities is that Phase I *benchmarks* were extremely unrealistic. An idea of just how overblown they were is the fact that, despite truly Herculean efforts, some components were able to achieve less than a third of their workplan targets in response to Phase I benchmarks (see e.g., Chapter 6). These original benchmarks included figures such as strengthening 53 community *organizations* with the outcome being that all 53 organizations would be strengthened and conservation activities implemented in 53 communities around the 3 protected areas by the end of Phase I (Project Paper p. 30).

SUBIR recognized the difficulty in operating at such an extensive scale but apparently in a sincere effort to respond to Project Paper benchmarks plus an honest concern for the threats to Ecuador's rich store of biodiversity, the Project proposed to initiate activities in 14 sites in Cotacachi-Cayapas Ecological Reserve, 11 in Cayambe-Coca Ecological Reserve, and 7 in Yasuní National Park, thereby making for a total of 32 communities by the end of Phase I. This proposal still represented a significant scope of activities considering the experimental nature of activities proposed under Phase I of the Project. It should be noted that this plan was never approved by USAID/Ecuador, which still entertained concern about the proposed scope of activities.

The Project Paper and other early SUBIR documents also proposed to focus on *"selected activities"* across the various components. But as previous chapters' cataloging of component programs and activities illustrates (see especially Chapters 3 and 6), somewhere this selectivity was compromised. The most recently available USAID Project Status Report (Apr 1-Sep 30 1993) reports that SUBIR was carrying out more than 300 activities at the time. Subsequent to the first Project-internal evaluation in December 1993, this figure was cut back. But draft 1994 work plans still reflect an over-burden of disparate activities in disparate sites.

The foregoing analysis leads the evaluation team to a number of fundamental recommendations that must be implemented for a Phase II to be feasible.

- During redesign, initial benchmarks must be seriously revised downward.
- The wide diversity of activities needs to be critically reexamined, and clear criteria set for determining what array of activity types should or should not be granted Project support,

and why.

- Whatever activity types are retained, these *must* be intimately integrated across components. To achieve such integration, the following basic mechanisms are recommended.

1. As many components as possible should be integrated and represented and work together in a very few (2 or 3) selected second-level organizations or community sites per protected area (see above for a recommendation and rationale for the numbers of protected areas to be retained);

2. Regional staff should be relocated so as to spend most of their time living in communities of participating second-level organizations, retaining only a skeleton staff of, e.g., a coordinator, secretary, guard/messenger, and drivers or boatmen at each of the present 4 regional offices of SUBIR.

3. Work-planning and budgeting for the activities of any one component must be reviewed by all other component coordinators, with their respective contributions to each activity in each site clearly spelled out. So that a majority of the Coordinators of other components agree on the importance, relevance, and timeliness of the proposed activities to the overall Project mandate of model-building.

4. The structure of the central SUBIR office should be modified to assign additional, regional liaison responsibilities to component coordinators. Each component coordinator will maintain a required technical specialty but will also serve as the designated central-office liaison to a particular field office. The goal here is not to usurp Regional Coordinators' control but rather: to promote better and more informed coordination among Project components across the different sites, permit speedier and more informed support to requests from the field; and establish a central point person who knows and understands the scope of activities in a particular region.

Mechanism (1) above responds to the fact of the unworkable overexpansion and dispersion of Phase I efforts already discussed. Mechanism (2) addresses the criticism so often heard by the evaluation team that SUBIR field staffers are little more than “migrant labor,” who constantly come and go but spend little time living and working in communities, thus unable to achieve a holistic understanding of how best to design, implement, and above all integrate interventions. It also responds to a profound concern on the part of the evaluation team that SUBIR's original vision of truly participatory, bottom-up conservation and development may have dimmed since the Project Paper's clear enunciation of this paradigm. Mechanism (3) is important for ensuring that all activities are pulling together and contributing to the elaboration of the resource management “models” (which, by definition, are made from different but interlinked and interacting elements) that constitute SUBIR's prime mandate and that ultimately may be its

greatest contribution to the sustainable use of biological resources.

Along with item 4 above, the intent of (3) is to correct the current situation whereby cropping efforts may be underway in one community, while in another a few kilometers away the focus is on artisan production, and in yet other communities of the region, the focus may be on micro-livestock, ecotourism, or women's kitchen gardens—one or more of which may have been launched without sufficient inputs of agricultural or other technical research and supervisory expertise, of economic and market analysis (see below), or of basic biological research as to sustainable harvesting or management of raw natural resources (recall e.g., Chapter 6's example of women's basket-weaving). The point is to force the concentration and integration of interventions in both the socioeconomic and biophysical landscape, and thereby to maximize the elaboration of "models" that are likely to have positive, synergistic impacts on development *and* environment, with both human and nonhuman beneficiaries.

- The time is at hand for all SUBIR components to analyze both their "success stories" and countercases so as to cement the different models of organizational development with which it is experimenting and to begin to define larger principles of "what works or what doesn't" under which conditions—i.e., again, the SUBIR mandate of producing replicable models for the sustainable use of biological resources.

The *greatest threats to biological diversity* in Ecuador derive from demands on natural resources from colonization, logging, and oil exploration. Responses to these threats result from initiatives both at the field level as well as through policy dialogue at the national and regional levels. SUBIR component activities should be integrated and concentrated in specific second-level organizations, communities, and sites where these threats are greatest. SUBIR can achieve greater impacts by working to ensure such groups' legal access and rights to land and resources and by assisting them in opening a dialogue with private-sector resource interests as a way to limit pressure on protected areas. The para-legal program already represents a step in this direction.

- SUBIR needs to focus and concentrate its efforts in those areas where the threats to protected areas, ecological systems, and processes, and biological diversity arise from logging, petroleum, and subsequent colonization, and the expansion of the agricultural frontier. Ideally, integrated field activities will be coupled with policy initiatives to stimulate potential reform and address the threats both at the field and national level. Environmental research and monitoring, coupled with the presence of SUBIR in the field can help to create environmental awareness in industry and the Government of Ecuador.
- A further condition for choosing in precisely which of such threatened "hotspots" to concentrate and integrate Project operations is that there be a preexisting functional second-level organization or community organization—i.e., the appropriate human materiél—to partner with. Attempting to create such organizations *de novo* is unlikely to result in significant impacts within the LOP.
- SUBIR needs to continue the dialogue with logging and oil interests in an effort to

promote policy reform and to contribute to industries' adoption of more sustainable resource use practices.

- Through its policy function SUBIR needs to propose policies to regulate land use and natural resource use in an effort to better protect and manage the resource base and to address resource distribution issues within society.

- SUBIR needs to ensure that the communities with which it works capture the link between economic development opportunities and the protection of biological diversity so that they are committed to sustainable use and protection of these resources against encroachment.

Currently, a number of SUBIR activities—particularly those in the component on Improved Use of Land and Biological Resources—are having only marginal impact on the protection of biological diversity. While some provide benefits to rural people, this does not necessarily result in the protection of parks and reserves. And many do not demonstrate an integrated approach to resource management that pulls together natural and social sciences in both design and implementation. Because of a lack of monitoring programs, even activities that appear to be successful, are difficult to evaluate. Considering the lack of human and financial resources, and the geographic scope of the Project, SUBIR can not afford to squander its energy, time, or money. Criteria must be established for activity selection. Those not meeting these standards should be phased out or adopted by other, more appropriate organizations.

- The selection of sustainable development activities should be carried out in a much more strategic fashion. These activities must clearly demonstrate their direct relevance to SUBIR's overarching goal of testing and building participatory, bottom-up models for biodiversity conservation. Their design should facilitate monitoring, evaluation, and modification. And their implementation should reflect SUBIR's integrated approach to conservation and development.

A major thrust of the Project is the *creation of economic opportunities in buffer zones and through ecotourism*. If successful, such opportunities will hopefully relieve pressure on protected areas. Many of the activities undertaken by SUBIR are supply driven and do not necessarily derive from demand for the good or service that the Project will provide. Generally little information on the markets available for the goods produced is analyzed before Project implementation. A component of economic analysis and marketing should be integrated with all proposed income generating activities.

- The current component structure needs to be modified to respond to a critical lack of economic and marketing analyses related to economic development activities promoted in buffer zones. The evaluation team recommends the creation of an economics and marketing component to coordinate with other components on income-earning activities in ecotourism, forestry, agroforestry, cropping, stock raising, and artisanry. Under this

modality ecotourism would cease to operate as a component and be folded into the new marketing component, placing greater private sector emphasis on tourism.

A striking oversight in SUBIR to date is its inattention to the involvement of *private enterprise* in its Management of Protected Areas component, and especially its Ecotourism Development Component.

- SUBIR should expand contacts with private sector tourism operators and with existing tourist infrastructure (i.e., Sierra Azul, Boca de Onzole) to determine tourism opportunities between these operators and the communities where SUBIR activities are underway. SUBIR could play the role of a broker between the communities and existing tourism groups to ensure that ecotourism responds to the economic and cultural needs of the communities.

SUBIR also requires reform with respect to *gender*. As noted in Chapter 3, it appears that training is not always extended equitably to both males and females who may have equal need and desire for such training. In the case of such sensitive issues as land titling, SUBIR may even be contributing inadvertently to increased gender inequity. At a larger level, and given that many of the initial socioeconomic diagnostic studies cannot be located within the Project, there is a question as to whether Project selection of on-the-ground activities has always included evaluation of their differential impacts on men and women—who wins, who loses economically. For example, what are the relative returns to labor, by gender, of new techniques of forestry or agroforestry management versus, say, basket-weaving or button-making or increased production of low-value crops with limited or only very difficult and uncertain markets in the region (e.g., garden vegetables, yuca)? For instance, women in a number of Cotacachi-Cayapas Ecological Reserve communities visited by the evaluation team reported that Project cropping interventions there unacceptably increased their burden of backbreaking field labor without, in their eyes, yielding corresponding benefits. Such interventions—no matter with which sex—are unlikely to be sustainable.

- SUBIR must take greater account of the differential participation in, and benefits to, both men and women in all its activities—whether these be second-level organization or nongovernmental organization training or technical interventions on the ground.

Policy analysis and dialogue are legitimate and important tasks for SUBIR. However, it is important to stress that SUBIR should focus on field activities to address the threats to biological diversity and not become a policy project. Policy is important and SUBIR's activities through the paralegal program and community efforts can feed the policy process from the bottom up. *Interinstitutional collaboration* is essential for communicating SUBIR knowledge or reaching out to (potential) Ecuadorian collaborators to collectively work to further Project objectives. Both the policy and collaboration function involve issues that usually transcend one single component, at least in the early stages and that are new, innovative, or untried. Policy may in fact incorporate

elements of risk for potential high gain. It is critical that such efforts be carried out by someone of experience and proven skill, until such time as they mature and can be assigned to a component for more conventional implementation.

- Both policy analysis and interinstitutional collaboration should be supported in future Project work.
- Both require broad knowledge of both SUBIR activities and of the Ecuadorian policy context, and therefore need to be managed by someone of high level within SUBIR.
- These functions should be carried out jointly. Since they transcend any one individual component, they cannot be easily lodged in any one of the existing components.
- In particular, this function needs to look at all the development activities and institutions that have a major effect on natural resources, such as oil, timber, mining, the military, and major tourism.

The protection of parks and reserves lies at the heart of this project. SUBIR's *primary government counterpart* is INEFAN, the agency charged with the management of these areas. Many believe that INEFAN does not give high priority to the survival of wildlife and wildlands. Their management efforts need to be greatly enhanced to deal with mounting threats for protected areas. This situation jeopardizes the entire SUBIR Project. Indeed, the apparent lack of "pro-active commitment on the part of the Government of Ecuador," at least as embodied in INEFAN, and the assignment of "necessary counterpart personnel and infrastructure" on the part of INEFAN are the only major logframe assumption that may now be invalid. INEFAN efforts must therefore be complemented by other activities.

- SUBIR should seek a commitment from INEFAN of adequate support for protected area management and protection for the areas where SUBIR is working.

- SUBIR, together with second-level organizations and national and international nongovernmental organizations, should begin to craft a complementary co-management and co-funding strategy that would actively involve nongovernmental organizations and governmental organizations, second-level organizations (including indigenous federations), and local communities.
- SUBIR may consider involving CETUR in addition to other Government of Ecuador institutions in selected efforts to promote awareness of the need for and value of biodiversity conservation, both among the general public and among other Government of Ecuador entities.

While, as already noted, the evaluation team believes that a Phase II is warranted, a successful Phase II will depend on a number of changes related to overall *Project governance, management, and staffing*. In this realm, the following findings and recommendations are offered.

First, the current consortium structure for SUBIR has not proved operable or cost effective

from a Project management perspective. The Consortium Executive Committee represents a duplication of management effort. The consensus modality under which it operates has limited its ability to respond to critical issues in a timely manner. This has hampered overall Project implementation. The positive contributions of the consortium members can be maintained by the proposed subcontracting arrangement discussed below, while eliminating the inefficiencies of multiple-tiered decision making:

- Establish CARE/Ecuador as the lead organization responsible for the management and implementation of the SUBIR Project and do away with the present consortium management system. CARE/Ecuador would sign subcontracting agreements with both international and national nongovernmental organizations and institutions with requisite technical skills to ensure successful implementation of the SUBIR Project. CARE/Ecuador would also call upon the implementing partners to participate yearly in project monitoring activities, strategic planning, and policy dialogue so that the partners have input into the process. It is important that the positive aspects of the Consortium Executive Committee arrangement, that is the contribution to providing a broad conservation and development perspective, be captured and fostered.
- Actively involve the Project Implementation Committee to promote Ecuadorian participation in the implementation of the Project. The Project Implementation Committee should meet regularly and discuss substantive issues related to Project management and policy. The Project Implementation Committee offers an ideal forum for policy discussions among the members and offers USAID the opportunity to promote policies with the nongovernmental organization community and INEFAN in the context of the successful implementation of SUBIR.
- USAID/Ecuador should strengthen Project Implementation Committee operations so that it can play a significant advisory role to the Project. Given the advisory, rather than Project oversight role envisioned, it is recommended that the organization be renamed to *Project Advisory Committee*.

The evaluation team recognizes that various component activities do not represent the traditional strengths of CARE, especially related to biological research and park management. Also, CARE/Ecuador has no in-country lowland tropical agricultural experience and will need to address this deficiency.

- A mechanism should be established to ensure that CARE/Ecuador as the organization with sole responsibility for the implementation of the SUBIR Project contract the necessary technical assistance required for successful implementation of the Project. CARE should contract with both international and Ecuadorian nongovernmental organizations to obtain this required support. In addition CARE should take advantage of its tropical agricultural work in other countries, namely Peru, to support the agricultural activities underway within the land use component.

Second, *staffing* in the Quito and field offices must be based on the implementation and support needs of well-chosen and designed/integrated Project activities. As noted elsewhere in these recommendations, the evaluation team strongly believes that intensive Project activity review and evaluation must be done as a first order of priority. The team also believes this will coincide with a decision that it is essential to phase out and eliminate many of the Project activities that are small-scale, duplicative, and not part of a more highly structured intervention involving many different components.

Total staff skills must be available to provide necessary professional support to the different Project activities. Location of that skill does not absolutely have to reside either in the Quito or a regional office. The skill should be located where it is most readily and easily accessible to service relevant activities for all of SUBIR. Realignment of Project activities will mean that staff skill allocation and regional office functioning and existence will have to be reexamined and probably reassigned in some measure. Any final decision on regional offices and staffing patterns will depend on the portfolio of Project activities throughout the entire Project area. Some possible candidates for alteration can be identified at this stage, however.

- The lower Cotacachi-Cayapas Ecological Reserve area needs much stronger staff and professional support, particularly in lowland tropical agriculture.
- In all three protected areas, the specific activity sites need to be consolidated into no more than several activity sites, preferable lying close to the perimeter of the protected area to reinforce people's understanding of the relationship between economic development activities and the protection of biological diversity.
- Unless more activities are assigned to the area served by the Ibarra office, it might be appropriate for that office to be converted to an essentially PROMUSTA office, with other Project needs being met by staff located in Quito on an as needed basis.

Another area in which SUBIR needs to do some rethinking and reassessment is in its *linkages to national-level nongovernmental organizations* and under what conditions should SUBIR involve them in Project interventions. As a vital part of Phase II redesign, SUBIR needs to recapture the Project Paper emphasis on second-level organizations as the most likely locus of real impact on the human/natural resource equation. Why? Because second-level organizations represent the people most directly in touch with and dependent upon Ecuador's rich but threatened biological resources.

The evaluation team feels that SUBIR has lost sight of this fundamental reality, perhaps succumbing to overwhelming pressures to fund and service a multitude of small capital-city nongovernmental organizations in activities that are not always of visible benefit to SUBIR in moving forward its prime mandate of model building and testing. Although SUBIR has been charged with “strengthening” such entities, along with second-level organizations and governmental organizations, this strengthening must be strategic. This is particularly relevant as it appears that other major international donors may have a comparative advantage in this task in general, and stand ready to perform it. (Donors reported to be gearing up in this area include the Interamerican Development Bank, the UN Development Programme, the International Union for

the Conservation of Nature, and the World Bank.) The SUBIR-Ecociencia linkage (Chapter 7) is illustrative of the positive outcomes and products that can be expected when SUBIR gives proper thought to strategic linkages with implementing nongovernmental organizations; that of FUNDEAL (Chapter 6) offers a counter case. The foregoing observations give rise to the following recommendations.

- SUBIR must establish transparent criteria for when it is, and is not, appropriate for the Project to strengthen an nongovernmental organization, and in what topical areas and why. Nongovernmental organization strengthening must be based on clear *mutual* advantage to the nongovernmental organizations selected and to SUBIR—not just on a sense of obligation or of pressures on the Project to provide generalized training, funding, etc. to the Ecuadorian nongovernmental organization community at large.
- Training should include not only such topics as fundraising, institutional image-building, proposal preparation, practical accounting, and etc. etc. but also training to technically strengthen partner nongovernmental organizations. The former sort of training is all for naught if the nongovernmental organizations in question are technically inadequate.
- These criteria—along with others for the selection of specific activities—must be directly tied to SUBIR's prime mandate of building and testing models of the sustainable use of biological resources, which can later be replicated by its strengthened partner nongovernmental organizations around the nation.

The more detailed chapter recommendations point to an overall lack in organization and rigor in *Project implementation and management*. As noted above, efforts have often been diffuse and unfocused, and highly deficient in useful information on activity impact and value. At present, the data available are generally inadequate to make sound decisions for future planning or for determining the value of many of the interventions initiated by SUBIR. The evaluation team believes that the promise of many of the activities to date justify Project continuance, but finds that much better information is needed to justify and guide future directions and activities.

- SUBIR must implement a comprehensive, tightly structured, and highly critical analysis of all activities to date, documenting its findings and nascent models. The process will require at least two months of careful effort and highly professional outside expertise to guide and facilitate it.
- This analytic effort must include a detailed evaluation instrument(s) administered to all staff and activities, total staff review and analysis of results and final evaluation of all activities by relevant staff persons. Results must be thoroughly documented and used as the basis for deciding which activities should be eliminated, modified, or continued. All this information is used as input in the development of a real management information and monitoring and evaluation system and as part of strategic planning for SUBIR (see below). This extended exercise should terminate no later than the end of August.

At present the *integrated analysis of Project activities* is essentially nonexistent. Staff have

some inherent sense of what has and has not worked and why, but there is no systematized way of accessing data about Project activities, comparing them within and between the three Project areas, documenting them and making that information available to interested parties in Ecuador and elsewhere. In short, SUBIR is not yet able to function as the "learning institution" it was intended to be in the Project Paper. More to the point, if the following exercises are not carried out, there is no way that anyone outside of the Project could justify an expansion to a Phase II. Part of why this is the case is that, after nearly two years of implementation, SUBIR still has no functioning monitoring and evaluation system. Thus, it is recommended that:

- At the same time that staff are engaging in the processes outlined above, they must establish and test a serious and comprehensive management information and monitoring and evaluation system. Part of the instrument used in the SUBIR evaluation outlined above should guarantee provision of necessary data for the management information and monitoring and evaluation system. This provides an excellent opportunity for testing and refining the data requirements proposed in the 1992 collaborative work between SUBIR and USAID staff and consultants.

The information generated through the above exercises must feed into a systematic *strategic planning effort* by SUBIR during the months of September and October. Approval of Phase II should depend on SUBIR's successful completion of these activities and consideration of an expansion of Phase I to permit completion of this work should be considered.

- SUBIR should contract outside experts and facilitators for much of the foregoing analytic, evaluation, and strategic planning efforts as soon as possible.
- As part of this strategic effort SUBIR needs to focus on the issue of the sustainability of its activities. The Project needs to work with and through a select number of nongovernmental organizations, CEDENMA, large and vocal second-level organizations, and maybe an enlightened tourism sector to ensure a high level of Ecuadorian participation that can plan to take over in the future activities that SUBIR is currently promoting and implementing.

An additional monitoring aspect of the Project involves the assurance that EAs are carried out on required activities. As discussed in the Project Paper and in memoranda from the REA/SEA, specific activities will require EAs as amendments to the Project EA (with legal requirement for approval by the USAID/Washington LAC Bureau Environmental Officer, before they can be implemented). Determination of the need for a formal EA must be made by the REA/SEA and the USAID/Ecuador Environmental Officer, in consultation with the LAC Bureau Environmental Officer if necessary. The team has determined that the compliance with this legal requirement is incomplete. Environmental determinations exists for some activities, while others where such a determination is necessary have been implemented without following the required procedures.

- As part of the recommended external monitoring and evaluation effort, a review of all

SUBIR field activities should be undertaken to identify those activities that warrant EAs and those for which EAs have been undertaken to determine compliance with EA regulations. Where required EAs have not been implemented, SUBIR should discuss mitigative, or corrective actions with the REA/SA.

- SUBIR should provide in-service training to all Quito based and field coordinators regarding EA compliance.

Annexes

Annex A. Scope of Work

Annex B. List of Persons contacted[a]

Primary resource users and base-level organizations

Añango Community, PNY
3 men, 2 women (Q) Community members

Asociación de Madereros de Esmeraldas

Plaza, Patterson	President

ATAACU - Asociación de Trabajadores Agrícolas Autónomos de Cuellaje, RECC

Alvarez, Yolanda	President
Andrade, René	Coordinator

Baeza Community, RECAY

3 men	Faculty of Baeza College and community members

Borbón Town, RECC

3 men, 2 women (Af-E)[b]	Officers and members of the Juventud Progresista de Borbón

Camarones Community, RECC

7 women (Af-E)	Members of the Grupo 3 de Noviembre de Camarones, who work a communal plot

Cascabel Community, RECAY

2 men	Arenillo Ecological Club

Centro Chachi El Encanto, RECC

Añapa, Germán	President, Centro Chachi
Ortíz, Emilio	Secretary, Centro Chachi

Chaco Community, RECAY

6 men, 3 women	Community members and Faculty of the Quijos Technical College

Chonta Loma Community, RECAY

3 women	Members of the New Esperanza Community Group

Cuyuja Community, RECAY

3 members	Cuyuja Mothers Club

FCUNAE - Federación de Comunidades Unión de Nativos de la Amazonía

Grefa, Luis (Q)[2]	SUBIR/FCUNAE Coordinator
Grefa, Rosario (Q)	Administrative Assistant
Guataloca, Jacinto (Q)	Institution Building Specialist
Illanes, Arceliano (Q)	Ex-president
Llerena, Washington (Q)	Agronomist

Finca Aragón, RECAY

Moscoso, Patricio	Aragón Superintendent

Guadal/Auxiliadora Community, RECC

3 women (Af-E)	President and 2 members of the Asociación de Trabajadoras Autónomas - Unidas Trabajan las Mujeres

Linares Community, RECAY

4 men, 1 women	Community members and members of the Agricultural Association

Maldonado Community, RECC

19 men (Af-E)	Officers and members of the Comuna de Ríos Santiago-Cayapas involved in SUBIR/CI tagua initiative
5 women, 3 men (Af-E)	Officers and members of the Grupo Pepa de Marfil

Municipio del Coca, RECAY

7 men	President and officials of the municipality

Palmas Community, RECAY

2 men	Community members

Papallacta Community, RECAY

12 men, 4 women	Members of the Rumicocha Ecological Society

Pichiyacu Community, RECC

14 women (Chachi)	Community members, some of whom do craftwork
3 men (Chachi)	Community members who support lagging agreements with Endesa Botrosa

Playa de Oro Community, RECC

3 men (Af-E)	President of the Forestry Committee, President of the Junta Parroquial; and
1 woman (Af-E)	President of the Community
1 man (Af-E)	SUBIR para biologist
22 men, 14 women (Af-E)	Playa de Oro community members

San Miguel Community, RECC

8 women (Af-E)	Treasurer and members of unnamed women's group who work a communal plot
1 man (Chachi)	SUBIR para biologist

Sinangüe Community, RECAY

12 men, 6 women (C)	Members of the comuna Cofán

Zapallo Community, RECC

1 man (Af-E)	SUBIR paralegal

other organizations and/or beneficiaries

CAAM - Comisión Asesora Ambiental
Carrera, Luis Executive Director

CARE/Ecuador (549-469, 563-935, 231-579)
Dean, Lisa Assistant Director
MacGillivray, Leo Director
Royo, Darli Health Coordinator for CARE Latrine Project in Borbón
Perlaza, Raquel Health Coordinator for CARE Latrine Project in Borbón
Tracy, Fred Director of CARE's PROMUSTA Project
Rappe, Elizabeth Audio-Visual Specialist

CCD - Corporación Ecuatoriana de Conservación y Desarollo (465-845)
Ferro, Mauricio Biologist
López, Fidel Director

Centro Educativo Luz y Libertad, Borbón
Cerón, Angel Rector of the College
Meisenheimer, Lester President of the Board of the Center, and Missionary
Mendoza, Troilo Director of Center
Valencia, Natanael Evangelist Pastor

CEDENMA - Comité Ecuatoriano para la Defensa de la Naturaleza y el Medio Ambiente (230-746)
Polit, Vicente Director

CETUR - Corporación Ecuatoriana de Turismo (239-044)
Martínez, Paulina Staff Member
Struve, Fernando Staff Member

CIDESA - Fundación de Capacitación e Investigación para el Desarrollo Socioambiental (467-684)
Ante, Wilmer Agronomist working in tagua in Maldonado (RECC)
Calero, Rodrigo Executive Director

DED - Deutscher Entwicklungsdienst (550-359)
Steinsberger, Thomas Technical Assistant to SUBIR/RECC (carpentery)

Ecociencia (526-936)
Alarcón, Rocio Acting Director and Ethnobotanist
Altamirano, Marco Research Biologist
García, Mario Environmental Education Specialist

Rodríguez, Fernando Biologist

ENDESA/BOTROSA and Affiliates (671-630, 260-630)
Fernández, Ricardo Forestry Technician, Setrafor Exploitation Group, Borbón
Guarderas, Andrés ENDESA/BOTROSA Economist

Fundación Natura (447-341/343)
Troya, Roberto Executive Director
Zuñiga, Luis Anthropologist

FUNDAGRO - Fundación para el Desarrollo Agropecuario (220-533/534)
Chang, Julio Deputy Director General
Poats, Susan International Consultant

FUNDEAL - Fundación para el Desarrollo Alternativo (238-801)
Guamán, José RECC Agronomist and Professor, Univ. of Loja
Robalino, Guillermo Executive Director
Sigcho, Cristóbal RECC Sociologist

GTZ - Sociedad Alemana de Cooperación Técnica (500-041)
Bunning Kropp, Torsten MAG Technical Assistant in Forestry Policy
Vollmer, Udo MAG Technical Assistant in Forestry Policy

Herbario Nacional (441-592)
Neill, David Administrative Director

IDEA - Instituto de Estrategias Agropecuarias (522-275)
Bonifaz, Neptalí Executive Director

INEFAN (541-988/955)
Barba, Jorge Director
Cordero, Miguel Secretary to the Director and INEFAN Liasion to SUBIR
Díaz, Franklin Head, PNY
Encalada, Vicente Forester, RECC
Laso, Enrique Coordinator, GEF
Rosales, Galo Head, RECC

International Union for the Conservation of Nature (466-622/623)
Izko, Xavier National Coordinator

MAG - Ministerio de Agricultura y Ganadería - (552-619)
Flood, David Policy Project

Maxus Oil Co. (462-450, 467-705)

Abad, Boris P.	Director for Government Affairs and Environment
Kaslin, Roberto	Director, Community Affairs
Ortega, Milton	Director for Community Relations

OIKOS

Encalada, Marco	Executive Director

Peace Corps (561-224/225)

Berg, Karl	PCV with SUBIR/RECC (R&M)
Cooley, Miles	PCV parttime with SUBIR/RECC (crafts)
Garcés, Francisco	NRM Program Manager for Peace Corps/Ecuador
Hayum, Brian	PCV with SUBIR/PNY
Sullivan, Rodney	PCV with Fundación Natura
Terrack, Patricia	PCV with SUBIR/RECC (R&M)

SUBIR/Quito (563-935, 321-579)

Argüello, Patricia	Executive Assistant (CARE)
Black, Juan	Coordinator—Protected Areas Management, and Coordinator—Ecotourism Development (TNC)
Calderón, Luis	Coordinator—Improved Use of Land and Biological Resources (CARE)
Merschrod, Kris	General Coordinator (CARE)
Ochoa, Humberto	Trainer (CARE)
Stallings, Jody	Deputy General Coordinator and Coordinator - Research and Monitoring (CARE/WCI)
Vaca, Rocío	Coordinator - Organizational Development (CARE)
Villaces, Amparo	Financial Coordinator

SUBIR/PNY (06-880-472)

Antuni, Germán	Extensionist
Calapucha, Alba	Water System Administrator
Collantes, Gonzalo	SUBIR Extensionist (Yuca)
Hermidas, Sofía	Administrative Assistant
Villacrés, José	Area Coordinator (Coca)

SUBIR/RECAY

Coro, Patricio	Social Promotor
Chicaiza, Tito	Extensionist
Domínguez, Diana	Administrative Assistant
Ortíz, Luis	Area Coordinator
Paillacho, Danilo	Extensionist
Roa, Patricio	Extensionist
Tamayo, Ernesto	Extensionist

SUBIR/RECC (low zone unless other wise indicated)

Estupiñan, Iván	Forestry Specialist
Gruezo, Rubria	Adminsitrative Assistant
Guerrero, César	Area Coordinator/Advisor on Rural Extension Organization
Jaramillo, Edelino	Forestry Extensionist
Nazareno, Teodolfo	Forestry Extensionist
Portocarrero, Antonio	Agroforestry Specialist
Quiñonez, Calixto	Area Coordinator/Advisor on Rural Extension Organization

The Nature Conservancy/Washington

Bath, Paquita	Director of Training
McCaffery, Dennis	SUBIR Project Manager for TNC

USAID/Ecuador (521-100, 521-211)

Clark, Howard	Regional Environmental Advisor for South America
Goddard, Paula	Program and Project Development, WID Officer, and Evaluation Specialist
Jordan, Michael	Acting Deputy Mission Director
Maldonado, Fausto	ANRO Natural Resources Specialist
Ruybal, Ron F.	ANRO Natural Resources Officer
Sanbrailo, John	Mission Director
Wiegand, Ken	ANRO Director

Wildlife Conservation Society/NY

Grajal, Alejandro	SUBIR Project Manager for WCS

World Wildlife Fund

Higgins, Mary Lou	South American Regional Director
Pendzyk, Christine	Resolve Coordinator

Other

Andrews, Edmund	MIS Consultant
Camacho, Ernesto	Director, Agricultural Technical School, Borbón
Kreig, Judy	CUNY PhD Candidate working in Maldonado (RECC)
Moore, Alan	Protected Areas Consultant
Rhoades, Robert	Head, SANREM CRSP
Tarjanyi, Steve and Laura	Owners of Cayapas Jungle Tours and Boca de Onzole Hotel

[a] RECAY = Reserva Ecológica Cayambe-Coca, RECC = Reserva Ecológica Cotacachi-Cayapas, YPN = Yasuní National Park.

[b] Af-E = Afro-Ecuadorian, C = Cofán, Q = Quichua.

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[a]Indicates that the document referenced was one of the approximately 30 diagnostic studies conducted to kick off the Project.

[b]The PP's Annex III consists of all Project Technical Analyses, each bound separately; they are also therefore referenced separately here. However, it should be noted that, throughout the evaluation team's tenure, the Project Office was unable to locate a number of these Annexes; and at least one of the core staff was wholely unaware of their existence.

[c]Quarterly, as versus semesterly, reporting was instituted at this point.